

The Chemist & Druggist



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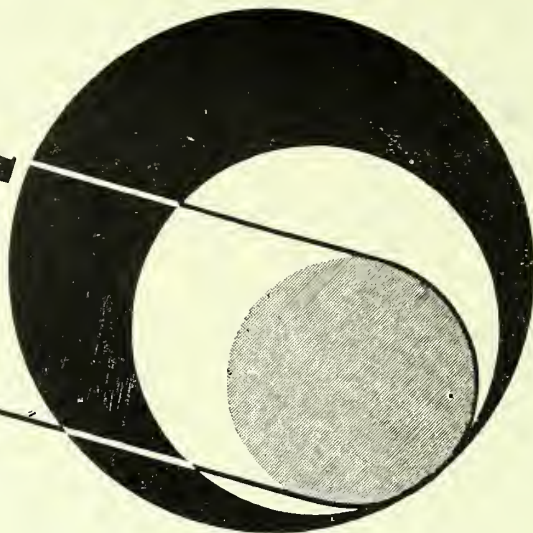
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CAMPHOR. B.P.

Flowers • Tablets • Slabs

KAHLBAUM LABORATORY
CHEMICALS for EXPORT ONLY

Chemicals

ACID TANNIC
ACID TRICHLORACETIC
BARIUM SULPHATE
CAFFEINE
CALCIUM GLYCEROPHOSPHATE
CAUSTIC POTASH
CELLOIDIN
DIMETHYL SULPHATE
HYDROQUINONE
MENTHOL SYNTHETIC
MUSK AMBRETTE

MUSTARD OIL (Artificial)
PIPERAZIN
RENNET
SALOL
SANTONIN
TERPINEOL
TERPINOL
THEOBROMINE
THYMOL
UREA
URETHANE



Trade Mark Brands

'ARCANOL'
'ARTHIGON'
'ATOPHAN' BALSAM
'ATOPHAN'
'ATOPHANYL'
'BETA EUCAINE'
'CYLOTROPIN'
'EUPHTHALMIN'
'FORTAMIN'
'FORMALIN'
'KRYSGOLAN'
'LÆVULOSE'
'MEDINAL'

'NEOTROPIN'
'NEUTRALON'
'NOVATOPHAN'
'PETEIN'
'PITRAPHORIN'
'PROGYNON'
'PROGYNON B. OLEOSUM'
'PROLUTON'
'SOLGANAL B. OLEOSUM'
'SYNTHALIN B'
'TRIKRESOL'
'UROSELECTAN B'

'UROTROPIN'
'VALISAN'
'VASANO'
'VERAMON,' etc.

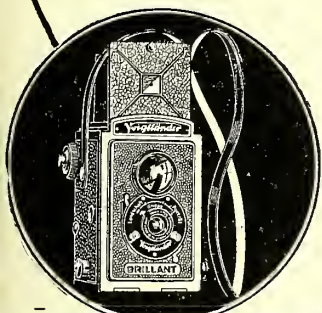
X-RAY PRODUCTS
CASSETTES
SCREENS
DEVELOPERS
ETC.

SCHERING

LIMITED

188-192 HIGH HOLBORN • LONDON • W.C.1

IN UNIVERSAL DEMAND from Consistent Advertising
VOIGTLÄNDER CAMERAS "BRILLIANT," "BESSA," "SUPERB," etc.



Voigtlander - FILM



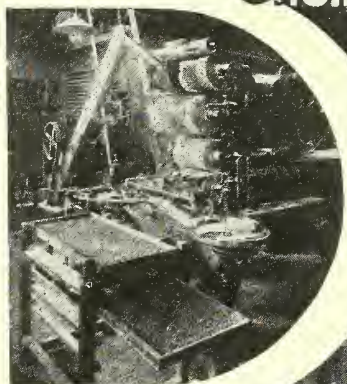
VOIGTLÄNDER FILMS

"ILLUSTRATION" and "BESSAPAN"

Please address enquiries "Voigtlander Dept. DC."

Private formula work

Pills and Tablets
manufactured under the control of
Analytical and Qualified Chemists



ONE OF OUR
LARGE
'PILL MAKING'
MACHINES

Below:
SPECIAL
COATING

**Coated
or
Uncoated
Bulk
or
Packed**



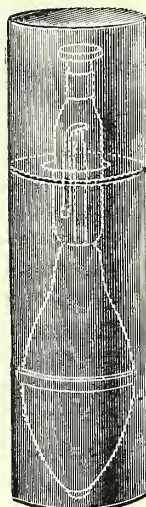
A
SECTION
OF OUR
BOX MAKING
AND
SHOW
MATERIAL
DEPT.

Exceptionally keen prices

COX *Estab. 1839*
 ARTHUR H. COX & Co. LTD.
 of BRIGHTON

From the "DEPENDABLE" SERIES of ATOMIZERS

(ENTIRELY BRITISH MANUFACTURE)

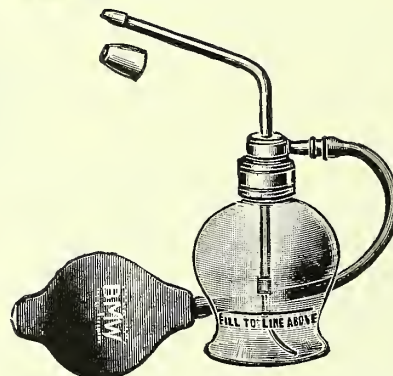


No. 40

A POCKET ATOMIZER
IN STOUT CYLINDRICAL
CARRYING CASE

EACH - 1/8
DOZEN 19/-

SUITABLE FOR EITHER
AQUEOUS, ALCOHOLIC
OR
LIGHT OILY SOLUTIONS



No. 8. Atomizer for Throat or Nose, for use with oil or water. Made with a solid metal screw mount, detachable metal nasal mount, and plug-in metal mount to bellows. Each 3/2
Spare Glass Bottles with solid N.P. screw cap. Each 6d.

TANNIC ACID SPRAY OUTFIT FOR BURNS

No. 13. Consisting of a 2-oz. Amber Bottle, Vulcanite Spray Mount, complete with Bellows. And 25 Tannic Acid Compound Tablets. Each 3/6

BRITTON MALCOLM & WAYMARK LTD.

38 Southwark Bridge Road, S.E.1

Phone : Waterloo 4874 (three lines)

Are YOU capitalising these 2 latest Coty successes?

Coty
"AIR SPUN"
FACE POWDER

IN 2 TEXTURES

"SPECIAL" TEXTURE For Dry Skins.
"ORIGINAL" TEXTURE For Normal Skins.

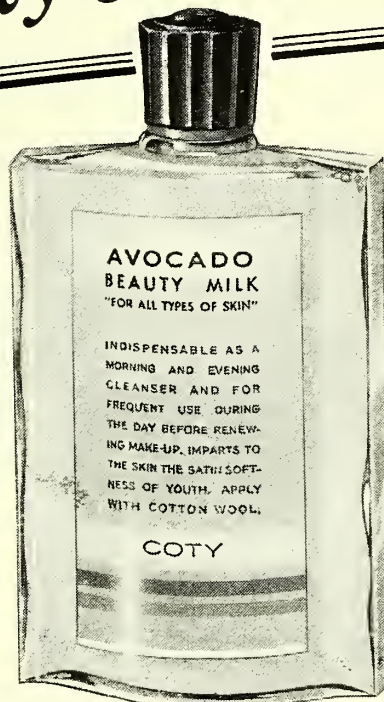
Enables you to satisfy every customer whatever the nature of her skin. The two fashionable shades GITANE (warm peach tone) COTYTAN (alluring suntan shade) are in enormous demand.

Series 060

2/3

HALF 1/3 SIZE

Series 059



Coty
"AVOCADO"
BEAUTY MILK

A Beauty Milk unique in its vitamin richness and penetrating quality. Selling rapidly all over the country. Sales for you are certain and profitable.

Serial No. 1426

4/6

Keep full stocks—ensure steady profit

COTY (ENGLAND) LTD., 3, Stratford Place, London, W.1.
'Grams: Paricoty,' Phone: London. 'Phone: Mayfair 7244-9 (6 lines)

C.F.H.118



Quinine

AMSTERDAM BRAND
MAARSSSEN BRAND

QUININE and QUININE SALTS
QUININE ETHYL CARBONATE
CINCHONINE, CINCHONIDINE
QUINIDINE and their SALTS

Manufactured by

N.V. Amsterdamsche Chininefabriek, Amsterdam
N.V. Nederlandsche Kininefabriek, Maarssen

EXCLUSIVE DISTRIBUTORS FOR THE UNITED KINGDOM:

R.W. GREEFF & Co. Ltd.

Thames House, Queen Street Place, London, E.C.4

Phone: **Central 6550 (10 lines)**

Wires: "Greëff, Cannon, London"

and at

The Royal Exchange, Manchester

Phone: Blackfriars 9407-8.

Wires: "Greëff, Manchester"

'Rhodia'

Société des Usines Chimiques Rhône-Poulenc
PARIS

PHARMACEUTICAL PRODUCTS

Acetyl Paraminosalol
Acid Phenylethylbarbituric (and Sodium)
Adrenaline
Amidopyrazoline (Amidopyrin)
Cacodylates
Chloroform
Digitalin
Ethyl Paraminobenzoate
Glycerophosphates
Guaiacol Carbonate
Guaiacol Crystals and Liquid
Lithium Salts

Methyl Salicylate
Methyl Sodium Arsinat
Paraldehyde
Phenacetin
Phenylsemicarbazide
Piperazine and Salts
Potassium Permanganate
Potassium Sulphoguaiacolate
Pyrazoline (Phenazone)
Pyrazoline Salicylate
Resorcin
Salol

PHOTOGRAPHIC PRODUCTS

Glyconyl
Hydroquinone
Paramidophenol Hydrochlor.
Rhodol (Metol 100 per cent.)
Sodium Sulphite (Anhydrous)

TECHNICAL PRODUCTS

Cellulose Acetate and Plastic Materials
Resorcin
Pyrazolone Derivatives
Sodium Sulphite (Anhydrous)
Acetic Anhydride
Dimethylsulphate

O. Cresotinic Acid and O. Anisidine, etc.

VANILLIN
and SUPER VANILLIN

R.W. Greeff & Co. Ltd.

THAMES HOUSE, QUEEN STREET PLACE, LONDON, E.C.4

Phone : Central 6550 (10 lines)

Wires : "Greeff, Cannon, London."

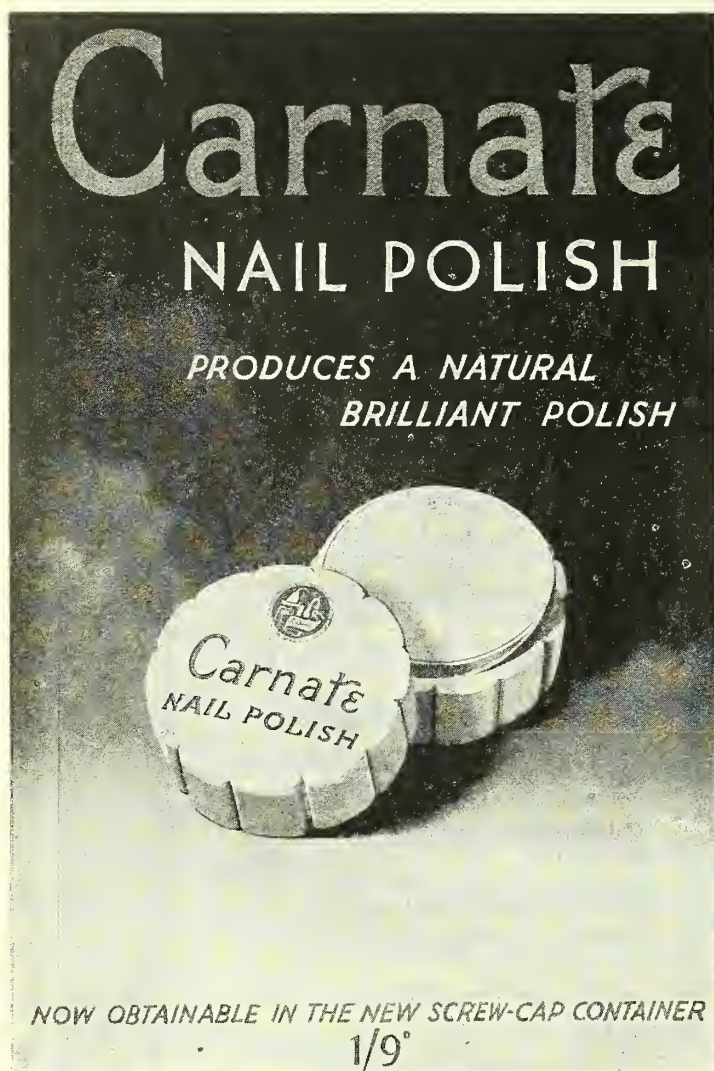
and at 536-7 ROYAL EXCHANGE BUILDINGS, MANCHESTER

Phone : Blackfriars 9407-8.

Wires : "Greeff, Manchester."

M

R. Demuth's Elegant Preparations



Frozoclone

REGD.

The Original
Solid Eau de Cologne

Retail 3/6 & 2/-
Per doz. 28/- & 16/-

Carnate

Nail Polish

Produces a natural brilliant polish.
Waterproof and Antiseptic. Now
obtainable in a new container with
screw cap, as illustrated.

Retail 1/9
Per doz. 14/-

Analax

The Popular Fruit Laxa-
tive in Pastille Form 2/3
per doz. 21/-

Harmozan

Pineneedle Extract
Bath Squares 3/9 & 2/-
per doz. 30/- & 16/-

Mirados

A Scientific Preparation
which Prevents and Alleviates
Insect Bites. 1/3 per bott.
Per doz. 10/-

Risiccol

Demuth's Castor Oil Powder
— in boxes containing 20
single dose bags, 3/-
per doz. 27/- Also in Bulk

Muthol

Paraffinum Liquidum in Solid
Emulsion, in three flavours,
Raspberry, Orange & Lemon.
Reputed 1-lb. Jars 4/-
per doz. 32/-

See that you secure these
Handsome Showcards illustrated here

R. Demuth's Laboratories

Phone :
MAIDA VALE 5340

68 SALUSBURY RD., & MONTROSE AV., N.W.6

*This
Beautiful
Showcard
in full
colours
will enhance
the appearance
of any
Pharmacy
and will
prove an
incentive to
increased
sales of
"Frozoclone"
the Original
Solid
Eau de
Cologne*

IN TWO SIZES
3s. 6d. & 2s. 6d.
Wholesale 28/- & 16/-
P. A. T. A.

Frozoclone

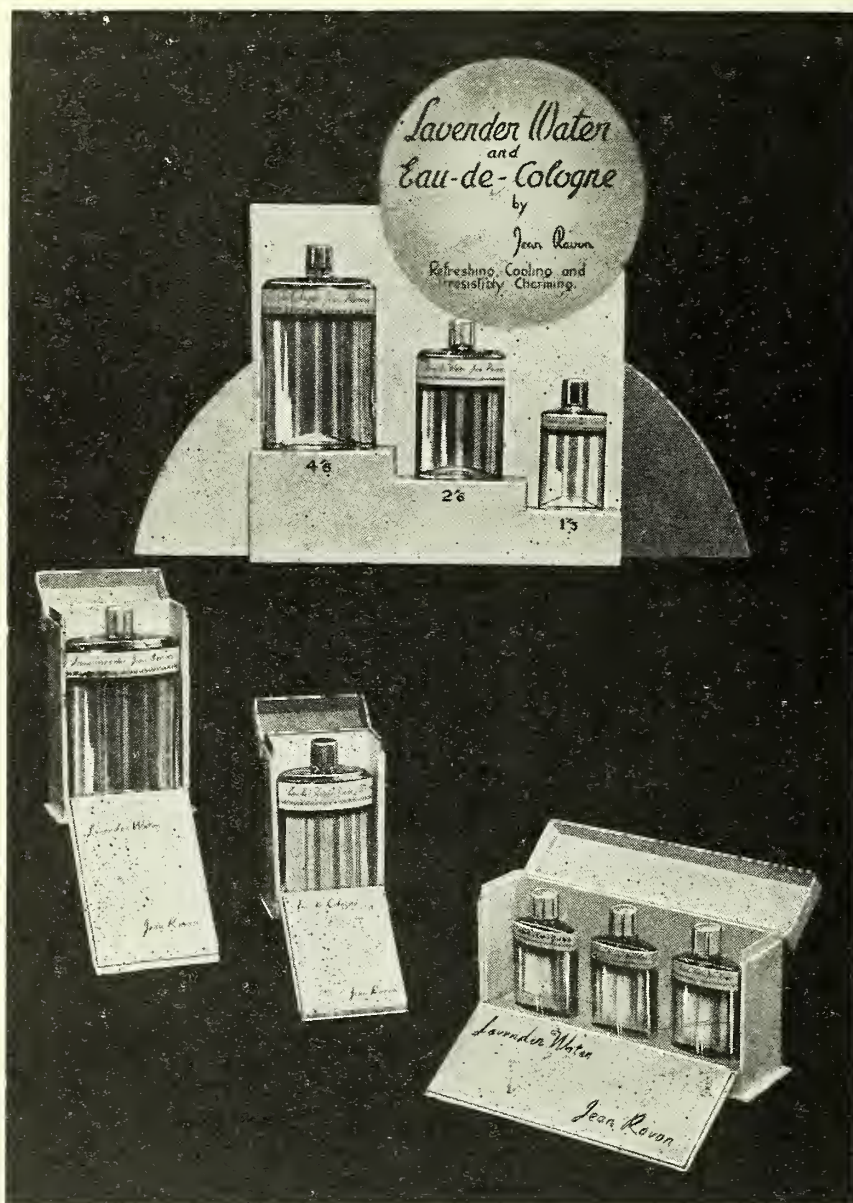
*There's
nothing quite
so refreshing*



THE ORIGINAL SOLID EAU de COLOGNE

2/- and 3/6

Lavender Water and Eau-de-Cologne by Jean Ravon



Superbly packed in modern style boxes—instantly appealing to your most discriminating customer—a tasteful free display stand with each order—and, most important to you, showing a worthwhile margin of profit. Capture your share of the summer trade with Ravon Eau-de-Cologne, and Lavender Water.

Piesse and Lubin Ltd.

KERSAL VALE

MANCHESTER

Pharmacy for the QUALIFIED

WHY NOT YOUR OWN? TOILETS AND SUNBRONZ LUXURIES, WITH OWN NAME IN UNIFORM STYLE

The BARONET SERIES

Twenty-eight uniform products, each of which can be sold at SIXPENCE and render you more return than any proprietary.

THIS FINE DISPLAY FURNITURE IS GIVEN FREE WITH ORDERS FOR THREE GROSS (which may be fully assorted) or loaned with smaller quantities at a charge of 7/6 which is credited when three gross is achieved or when the stand is returned.

			% Profit* on Cost	% Profit* on Sale
Per dozen	...	@ 4/- nett	50%	33 1/3%
3 dozen	...	@ 3/10 "	56 1/2%	36%
6 "	...	@ 3/8 "	63 1/2%	39%
1 gross	...	@ 42/- "	71 1/2%	41 1/2%
2 "	...	@ 41/- "	75 1/2%	43%
3 "	...	@ 40/- "	80%	44 1/2%
5 "	...	@ 39/- "	84 1/2%	46%

* Calculated on a "Sixpenny" retail price

Contracts may be booked for estimated season's requirements, one gross or upwards, at relative rates, to be taken as required. Each delivery is invoiced at its own quantity rate; and a credit by cheque given on completion of the contract quantity.

WHY NOT YOUR OWN?

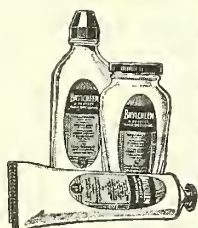
PRODUCTS

Astringent Skin Lotion.
Bay Rum (Industrial)
Bay Rum and Cantharides
Bay Rum and Quinine
Brilliantine (Inseparable)
Calamine Lotion, B.P.C.
Coconut Oil Brilliantine
Crystal Tonic Brilliantine
Emulsified Coconut Oil Shampoo
Glycerine and Cucumber
Glycerine and Rosewater
Hair Cream (Plain)
Hair Cream with Oil
Hair Setting Lotion
Hair Tonic
Honey and Flowers
Jasmin Oil
Lavender Tonic Spirit Shampoo
Lavender Oil
Lemon and Almond Cream
Lime Cream
Spirit Soap
Sunbronz Oil
Sunburn Lotion
Sunburn Calamine Lotion
Tan-Glow
Toilet Paraffin
Violet Oil



AYRTONS :: LIVERPOOL & DUBLIN

£215
IN CASH
PRIZES



A golden opportunity

GREAT
BRYLCREEM
Window Dressing
Competition

July 6TH. to August 1ST.

- ★ Numerous valuable consolation prizes
- ★ Special section exclusively for Chemists
- ★ Every entrant to receive a prize
- ★ **HEAVY ADVERTISING IN THE PRESS**

will support this great window dressing competition and make your entry worth while, apart from the prizes offered.



A FOLDER, which contains full details of this competition, was sent to Retailers on June 20th. If you've not yet received your copy please write for it at once. If you obtain your Brylcreem from a wholesaler, ask HIM for a copy.

THE COUNTY PERFUMERY CO.
NORTH CIRCULAR ROAD, WEST TWYFORD, LONDON, N.W.10



POTTER
AND
CLARKIE
LTD

LONDON

60-64 ARTILLERY LANE · E·1

Telephone: BISHopsgate 4761 (6 lines)

Telegrams: "Horehound Phone London"

MANCHESTER

77 DANTZIC STREET · 4

Telephone: BLAckfriars 8734

Telegrams: "Horehound Manchester"

Potter's Extracts

*retain the
freshness of
the drug*

KESTNER
EVAPORATOR

STEAM PANS

POTTER & CLARKE

LTD.

60-64 ARTILLERY LANE, LONDON, E.1.

Grams: "Horsebound, Phone, London."

Phone: Bishopsgate 4761 (5 lines).

AND AT 77 DANTZIC STREET, MANCHESTER

Grams: "Horsebound, Manchester."

Phone: Blackfriars, 8734.

Malted Slippery Elm Food

THIS REMARKABLE FOOD HAS BEEN DESCRIBED
AS THE MOST NOURISHING IN THE WORLD.
IT HAS A BENEFICIAL AND SOOTHING EFFECT
IN ALL CASES OF GASTRITIS, COLITIS, ETC.

Free samples for counter distribution

Handsome Showcards
supplied with all orders



IN FOUR SIZES

P.A.T.A.

9d. size 6/6 doz.
1s. 8d. ,, 15- ,,
2s. 0d. ,, 1/6 ea.
3s. 8d. ,, 2/8 ,,



Dr. Thompson's DANDELION COFFEE



for *Dyspepsia*

MADE ENTIRELY FROM
ENGLISH DANDELION
ROOT ROASTED AND
GROUND

In Enamelled Tins

P.A.T.A.

1s. 0d. size 8/- doz.
1s. 9d. ,, 15- ,,
3s. 0d. ,, 26- ,,

POTTER & CLARKE LTD.

60-64 ARTILLERY LANE, LONDON, E.1

'Grams: "Horehound, Phone, London."

'Phone: Bishopsgate 4761 (6 lines).

AND AT 77 DANTZIC STREET, MANCHESTER, 4

'Grams: "Horehound, Manchester."

'Phone: Blackfriars 8734.

Each Summer brings
bigger Sales of

LIDO

Sunburn Lotion

and

LIDO

Suntan Oil

Both packed in

6d. Bottles

3/9 per doz.

10½d. Bottles

6/6 per doz.



Colourful
Showcards
with each
order

POTTER & CLARKE
LTD.

60-64 ARTILLERY LANE, LONDON, E.1.

'Grams: "Horehound, Phone, London."
(Charged as 2 words.)

'Phone: Bishopsgate 4761 (6 lines).

AND AT 77 DANTZIC STREET, MANCHESTER, 4.

'Grams: "Horehound, Manchester."

'Phone: Blackfriars 8734.

Potter & Clarke's

SPRING LINES

Attractive Displays
Good Profits



Compound Sulphur Tablets

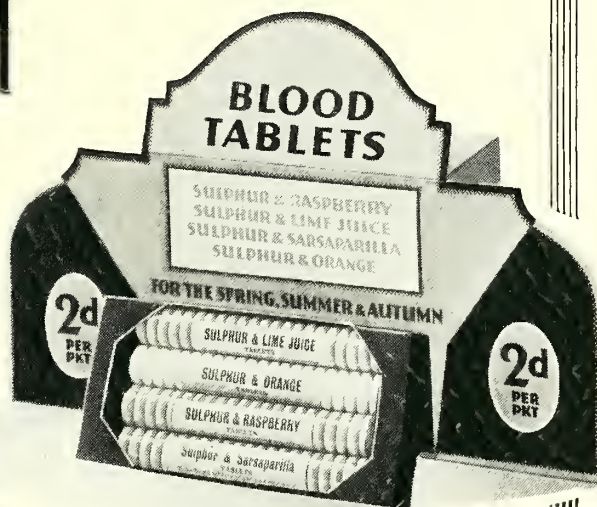
in Box with strut support
and flap-over Lid.

2d. Packets (oblong). 12/- gross.



Lime Juice and Sulphur Blood Tablets

6d. Cartons. 3/6 doz.
gross lots at 3/3 doz.



Blood Tablets

3 doz. in display outer, can be
supplied assorted Raspberry, Lime
Juice, Sarsaparilla or Orange Flavour,
or 3 doz. of one kind. A very attrac-
tive and novel display.

2d. packets. 12/- gross.



POTTER & CLARKE Ltd.

60-64 ARTILLERY LANE, LONDON, E.1
and at 77 Dantzic Street, Manchester.

Phone: Bishopsgate
4761 (5 lines)

Wires: "Horehound,"
Phone, London."

KASBAH
(REGISTERED)
KIDNEY CURE
PRICE 9d

A great Herbal cure for
Backache, Gravel, and
diseases of the kidney
and bladder

RETAIL PACKET
P.A.T.A. **9d**
per doz. 5/-

KASBAH
(REGISTERED)
KIDNEY CURE
A POSITIVE CURE FOR
Backache, Gravel and all Diseases
of the Kidneys and Bladder

KASBAH
(REGISTERED)
KIDNEY CURE
PREPARED SOLELY
BY
NATURE'S HERBS

KASBAH FOR ALL KIDNEY COMPLAINTS

This extremely effective
Showcard, 18 in. x 14 in.
in full oriental colours
supplied with all orders

POTTER & CLARKE

LTD.

60-64 ARTILLERY LANE, LONDON, E.1.

'Grams: "Horsehound, Phone, London."
(Charged as 2 words.)

'Phone: Bishopsgate 4761 (6 lines).

AND AT 77 DANTZIC STREET, MANCHESTER, 4.

'Grams: "Horsehound, Manchester."

'Phone: Blackfriars 8734.

POTTER'S

Catarrh Pastilles



National advertising
and unvarying quality
ensure a constant sale

P.A.T.A. 1/3, 11/- doz.

Packed in half-dozens

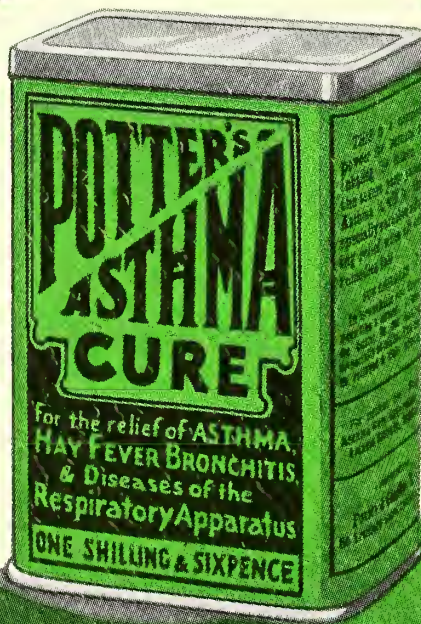
POTTER'S Asthma Cure

Consistently advertised
in all the great national
newspapers thus
ensuring a big demand

RETAIL 1/6

WHOLESALE 14/- per doz.

Packed in half-dozens



POTTER & CLARKIE LTD

60-64 ARTILLERY LANE, LONDON, E.1

Phone: BLSHopsgate 4761 (5 lines)

Grams: "Horsehound Phone London"

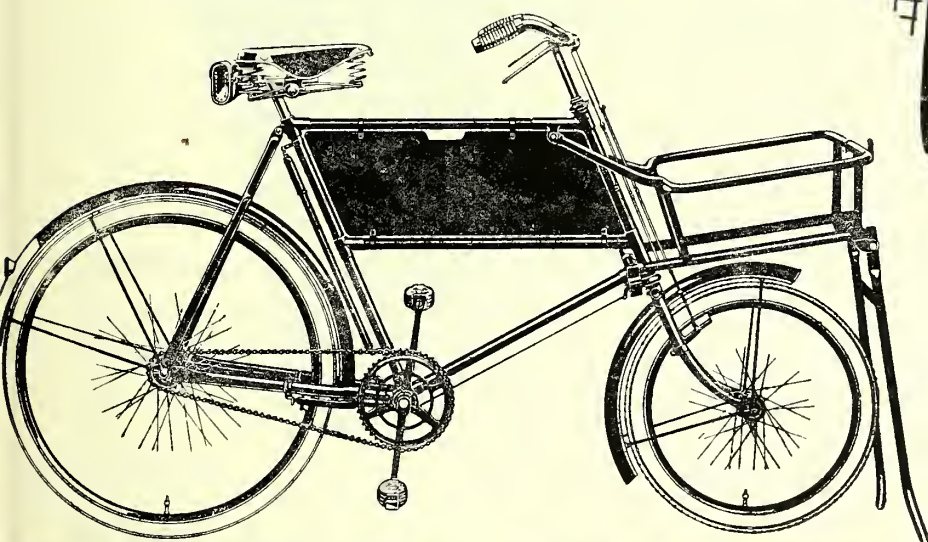
77 DANTZIC STREET, MANCHESTER, 4

Phone: BLAckfriars 8734

Grams: "Horsehound Manchester"

"No trouble at all, Madam! ...we'll send it round at once"

In these days of keen competition, to be able to promise your customers an immediate delivery of their goods, is not only desirable — it is essential. The Raleigh All-Steel carrier, designed to withstand the rigours of rough usage, makes quick deliveries a certainty. It is a marvel of reliability, and its extra heavy enamelling and super-strong frame ensure constant, efficient service under all conditions.



LOW GRAVITY CARRIER

Price **£6.19.6** Cash
(as illustrated)

Deferred Terms

5/- down and 12 equal monthly payments of 13/7. 22-in. frame.

Specially designed for carrying heavy or bulky loads without skidding—22-inch front wheel and larger basket fitment. An instantly operated stand built into the carrier is an important feature. EVERY RALBIGH CARRIER CYCLE has the finest equipment... BROOKS' SADDLE, DUNLOP TYRES, etc., etc.

STANDARD CARRIER

At same price and terms as above.
22-in. frame.

RALEIGH

THE ALL-STEEL BICYCLE

THE RALEIGH CYCLE COMPANY LIMITED, NOTTINGHAM. (Depots and Agents Everywhere)

**It's
unique!**



... and has a
READY SALE
among
**SMART
WOMEN**

The
SOUPLEX

"Nymph"

Retails
at

3/6

SHAVING SET for LADIES

Although the "Nymph" has been on the market only a few months it has already established itself as the most popular of ladies' shaving sets.

The only one of its kind, its dainty 3 x 2 inch mottled bakelite case contains a complete outfit—razor, blades, brush and soap. An indispensable addition to the modern woman's toilet and a new source of profit for stockists.

Write to your wholesaler for Trade Terms and list of Souplex Bakelite Products.

Manufactured by Souplex Ltd., Morecambe — makers of Souplex Razors and Blades



WATCH SALES SOAR!

WATCH YOUR STOCKS!

New National Advertising Campaign
to consolidate the success of **MORNING PRIDE**

"Morning Pride" has taken premier place in the shaving cream market. First in public favour "Morning Pride" is second to none in rapidly increasing sales.

Look to your stocks and be sure of your share of profits from this new wonder shaving cream.

**WATCH FOR THEM
IN—**

London Evening Standard
Sunday Express
Sunday Dispatch
Sunday Chronicle
Sunday Times
Sunday Mail
John Bull
Sunday Post
Sunday Weekly Herald
Glasgow Field
Scottish Tablet—Til Bits

MORNING PRIDE
REGD.

THE RAZOR READY BRUSHLESS SHAVING CREAM
PRODUCT OF FAIRY DYES LTD., PHARMACEUTICAL DEPT.

For particulars of attractive Initial Order terms write to

SOLE DISTRIBUTORS: FASSETT & JOHNSON LTD

86 CLERKENWELL ROAD, LONDON, E.C.1

THIS DISPLAY MEANS EXTRA MONEY IN YOUR TILL

HINDS
HONEY & ALMOND
CREAM

SOOTHES & COOLS SUNBURN

*Beautifies and
Protects the skin*



P. A. T. A.

SIZE 12" x 12"

Compelling national advertising has made HINDS CREAM a first-class summer line. Sales this season are up practically to winter peak level.

This striking showcard will increase *your* summer sales. Send for one today. Attractive show material is always available.

A. S. HINDS LTD., LONDON, S.W.20

Dr. Page-Barker's GUARANTEED Scurf Lotion

The recognised specific for
SCURF and DANDRUFF

Sells on its reputation to those who know,
and on its guarantee to those who don't.

per 18/- doz.

BONUS of Three bottles
with every 3 dozen

Also Special Large
Size :—

24/- doz., Retail 3/6

Smart Show matter

2/6

A GUARANTEE
with every bottle

THOS. CHRISTY & CO., LTD.

—4-12 Old Swan Lane, London, E.C.



LOOK TO YOUR STOCK SPRING IS HERE and SUMMER ON THE WAY



PICNICS, TENNIS-
PARTIES, HOLIDAYS, Etc.
all mean increased demand

'DAWN'
Regd.
RAVEL PROOF
FACE CLOTHS

A cheap face cloth will bring neither profit nor satisfaction. "Dawn" Face Cloths will increase both your turnover and your reputation. Your customers will come again once they have tried them. "Dawn" never gets slimy. Their delicate pastel colourings and soft texture make an instant appeal. They retail at 6d. and show a good profit. From your usual wholesaler.

Jacques Fabrics Ltd

105/107 Princess St., MANCHESTER

London Agent : G. H. Bolton, 28 Falcon Square, Aldersgate St., E.C.1

PIXIE
MADE IN SHEFFIELD.

You simply must
Stock
A Penny Blade.
The Public demands it.

Let it be British
Let it be SHEFFIELD
Let it be "PIXIE"

Packed in half
dozens.
The Ideal
Sixpenny Sale.

Sheffield's Finest Penny Blade

Write to-day for Sample and Terms to :
DRONFIELD TOOL Co., Ltd., Dronfield, Sheffield.

WARDONIA

**A CLOSE CLEAN
QUICK SHAVE
EVERY DAY**

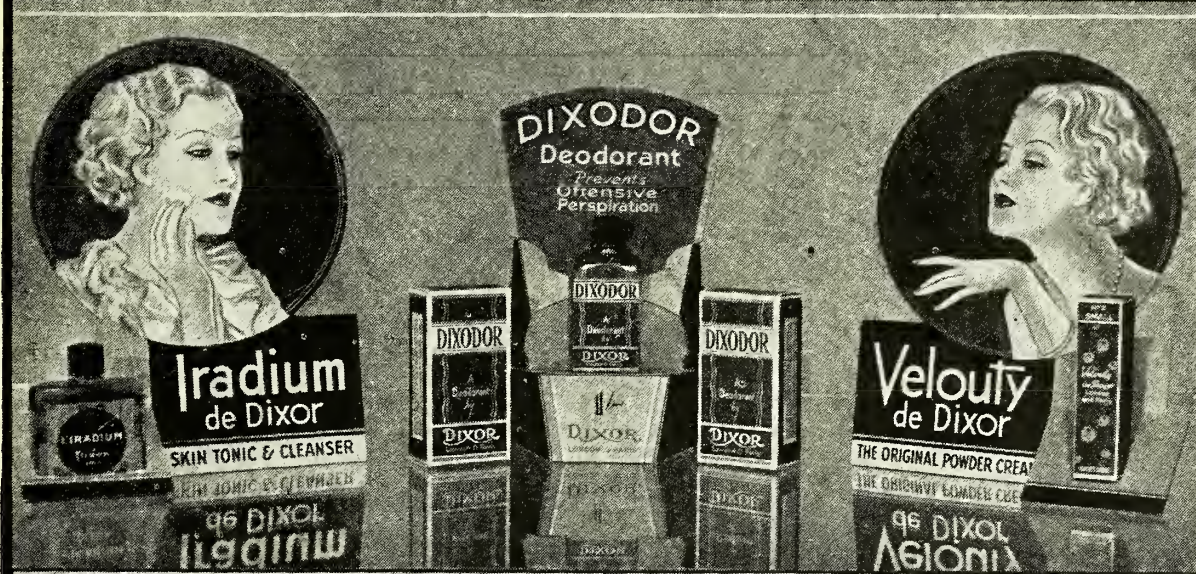
Your customers will prefer the fine shaving qualities and long life of Wardonia Barrel-Hole Blades. Order NOW—large range of display material free. Blades retail 4 for 1/- and 10 for 2/6 in metal containers. Cost 21/- per box of 120 blades.

Sole Makers : **THOMAS WARD & SONS, LTD.**,
Wardonia Works, Sheffield, 1



DIXOR

Summer Shelf Show



Show Card features the 1/- size which was specially designed for the hand-bag and for the traveller.

Also in 2/6 and 5/6 bottles.

Wholesale prices: 8/-, 18/-, 39/- doz. P.A.T.A.

IRADIUM de DIXOR

SKIN TONIC & CLEANSER

Now being advertised to be used with Velouty, giving you two sales.

DIXODOR DEODORANT

Latest addition to the DIXOR range. With each bottle a small packet of cotton wool should be sold.

Selling points:—

Effective but does not smart.
Does not stain or destroy clothing.

1/- bottles only.

Wholesale price:—8/- doz. P.A.T.A.

Send a post-card for the Summer Shelf Show.

Shades:—

White, Ivory, Natural, Ochre, Soleil Doré (Sungold)

Tubes		4 1/2 d.	per doz.
No. 1	...	...	3/-
No. 2	...	6d.	4/-
No. 3	...	1/-	7/-
No. 4	...	2/-	14/-
No. 5	...	3/-	22/-
Pots			
Handbag (unbreakable)	1/3	...	10/-
Glass	2/9	...	21/-
De Luxe (unbreakable)	4/6	...	36/-
P.A.T.A.			

VELOUTY de DIXOR

THE ORIGINAL POWDER CREAM
Soleil Doré

The Shade for the Suntanned
Should now be displayed.

DIXOR

Beauty Preparations

DIXOR LTD. ST. LEONARD'S WORKS, MORTLAKE, S.W. 14.

BIGGER SALES...

FAMOUS
FOR OVER
140
YEARS



ROWLAND'S MACASSAR OIL has maintained its popularity as the leading hair tonic and dressing; this has been achieved because the merits of Rowland's Macassar Oil are fully substantiated by results obtained. You will do well to recommend a hair preparation of such world-wide fame.

In two forms—"Red" for dark hair,
"Golden" for fair or grey hair.

A. ROWLAND & SONS LTD.
22 Laystall Street, Rosebery Ave., E.C.1

ROWLAND'S MACASSAR OIL

THE
"Lady Nicotine"

Regd.

A popular Ladies' Brush



HARD WHITE
HARD YELLOW

W. R. TILBURY & SON
47 Frampton Park Rd., London,
Est. 1880 E.9

We shall welcome your enquiries for
SHAVING CREAMS

POMADE HONGROISE

POWDERED SOAP

SHAMPOO POWDERS

A. GIDLOW & CO. BROOM LANE, LEVENSHULME, MANCHESTER
Telephone No.: Rusholme 2676

**OWN NAME COSMETICS
PACKED OR BULK**

An extensive special-
ised experience is at
your service. Keenly
interesting prices are
worth investigating.
Ask us to Quote.
Strictest confidence.

THE LABORATORIES, 61 Eagle St., London, W.C.1

10,000 on LALEEK ADVERTISING

by *Adelaide Grey* — BEAUTY SPECIALIST
— BOND STREET

The demand for my Laleek Preparations grows every week—created by this national advertising campaign—write for details, display stands, and show material. My representative will call on you any time you wish.

ADELAIDE GREY 27 OLD BOND ST LONDON, W.1.





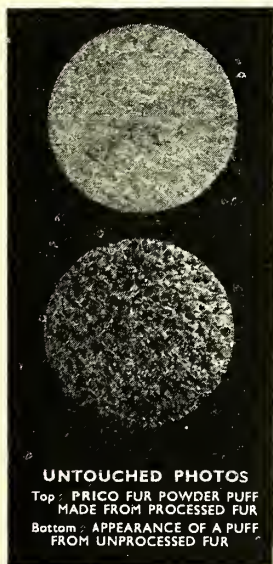
PRICO

Quality

POWDER PUFFS

RICH SILK-LIKE FINISH · DELIGHTFUL SOFT TOUCH
DELICATE SOFT COLOURS
HANDKERCHIEFS OF MODERN DESIGNS
IN CELLOPHANE ENVELOPES

Therefore
Stock always fresh · Easily handled and shown ·
COLOURS, DESIGNS AND PRICES AT A GLANCE
LIBERAL TRADE DISCOUNTS.
Silver Display Stands Free
Ask for Samples and Price List.



AT FIXED RETAIL
PRICES FROM

1/-

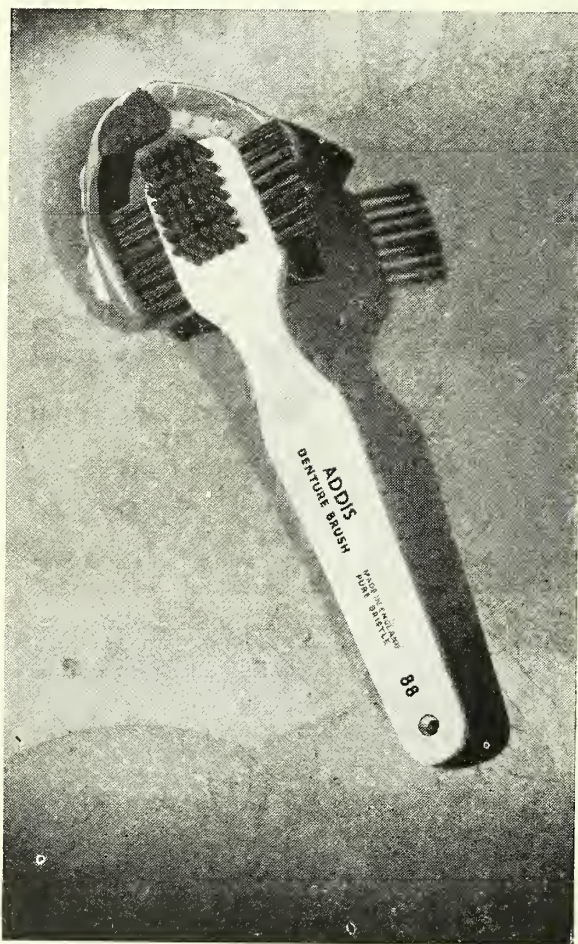
GRIMWOOD & DE GEUS, LTD.

FINSBURY COURT, FINSBURY PAVEMENT, LONDON, E.C.2.

Telephone: National 0312.

Supplied Through your Wholesaler.

MODERN DENTURES NEED A MODERN DENTURE BRUSH



Addis No. 88 Modern Denture Brush is the very last word in denture brushes. It is not a toothbrush adapted for cleansing dental plates but a brush deliberately designed for the job.

The handle is very substantial and is cranked to enable the brush to reach the deepest part of any denture. On each side of the brush is a wing which will penetrate any interstice. The bristle is the finest possible quality, black and extra stiff. Interestingly packed in boxes of half-a-dozen, a small showcard provided with each box. This brush sells on sight.

RETAIL 2/- each

PRICE 16/- per doz.

ADDIS

BRUSH WORKS

HERTFORD

ESTD.
1780

MADE IN ENGLAND BY THE OLDEST FIRM OF TOOTHBRUSH MANUFACTURERS IN THE WORLD

XAGGERATION

the use of colour is a common feature of present time advertising. Admitting the highly attractive value of a brilliant colour scheme, many advertisers would prefer a more realistic—and therefore more convincing—portrayal of the goods they offer.

It is just here that direct colour photography comes in.

Examine this illustration as you will — put it to every test — and see how accurately the objects are reproduced; with the added quality of that clear definition which distinguishes all Swain reproductions.



Dufay colour photo by D. A. Spencer.

Countless articles — fancy goods, scent bottles, confectionery, soap and so on *ad infinitum* — lend themselves to artistic grouping and display, in which work Swains' men, through long experience and artistic sense have the necessary qualifications.

JOHN SWAIN & SON LTD.

PHOTOGRAPHY + PHOTO ENGRAVING

———— TYPESETTING ————

ELECTROTYPING + + STEREOTYPING

89-92 SHOE LANE ——— LONDON, E.C.4

BRISTOL: Refuge Assurance Building, Baldwin St.

GLASGOW: 332 Argyle St.

MANCHESTER: 2a Gore St., Piccadilly.

NOTTINGHAM: Johnson House, Bilbie St.

And HIGH BARNET.



SHE LOVES A LOVELY LATHER

SOAPS — and many other articles are effectively advertised in newspapers and periodicals by means of photography in which the quality of "appeal" has now reached a high standard.

The human figure affords almost unlimited scope for artistic treatment and a happily arranged photograph, showing the uses of some every-day commodity, will invoke interest and sympathy—provided it contains the necessary touch of beauty and originality.

Swains' appreciate the high value of photographs for advertising and exercise especial care in their reproduction.

**SWAIN'S
BLOCKS**

JOHN SWAIN & SON LTD.

Photography + Photo-Engraving + Typesetting + Electrotyping + Stereotyping

89-92 SHOE LANE ——— LONDON, E.C.4

BRISTOL: Refuge Assurance Building, Baldwin St.

GLASGOW: 332 Argyle St.

MANCHESTER: 2a Gore Street, Piccadilly.

NOTTINGHAM: Johnson House, Bilbie St.

And HIGH BARNET

Max Factor

26 YEARS IN HOLLYWOOD

Making the Cosmetics of the Stars!

NOW IN ENGLAND

The Max Factor Organisation makes it possible for you to render a similar service to your customers that Max Factor Studios give the Film Stars in Hollywood. In the short space of two months, sales in England have been phenomenal and it has become necessary to acquire larger office accommodations.

Max Factor—Hollywood—Screen Stars . . . represent glamour and news which is creating enormous interest in the minds of all your women customers.

The arrival in England of the Max Factor organisation has received columns of editorial mention in the newspapers of this country, creating records for this type of publicity. This, in turn, is being supported by nation-wide advertising schemes using Daily Sketch, Daily Mirror, News Chronicle, Sunday Pictorial, Sunday Graphic, as well as a long list of weekly and monthly magazines with a wide appeal to women who will appreciate the service Max Factor can render to them.

MAX FACTOR, HOLLYWOOD & LONDON
MEANS BIG SALES AND BIG
PROFITS TO YOU!

★ Ask for Representative to call on you
and explain the interesting details of
this unique MAX FACTOR SERVICE.

Important to You and Your Customers

Behind each Max Factor product stands the **GUARANTEE OF PURITY PRODUCTION**, representing many years of scientific research. Every raw material . . . each ingredient . . . used in the making of Max Factor Colour Harmony Cosmetics must pass the painstaking analysis and exhaustive tests of skilled chemists.

No wonder Max Factor has enjoyed over 26 years of unmatched leadership in Hollywood and no wonder Max Factor Make-up is the choice of the 96% of Hollywood Screen Stars.

★ It is the purest Make-up science can create

MAX FACTOR, HOLLYWOOD & LONDON (Sales Ltd.)
49 OLD BOND STREET, W.1

TELEPHONE: REGENT 5706



KENT

ESTD. 1777

2 ATTRACTIVE MODERN LINES!

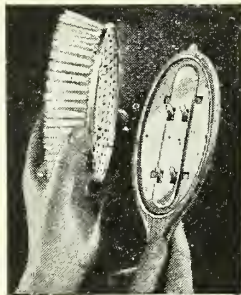
KENT-COSBY HYGIENIC REFILLABLE HAIRBRUSH

(PATENTED)

- BRISTLES TAKE OUT TO WASH
- HANDLE BACK NEVER SPOILT BY WATER

Also in Military shape. Handle backs in various finishes. Bristle refills in various qualities of pure bristle. Also with rubber cushion base.

Retail prices, with Satin Finish or coloured handles:—
7/11, 12/6, 18/6, 30/-,
45/-.



THE NEW "MESSAGE" SHAVING BRUSH

(PATENTED)

RUBBER
END

"A RUB-IN MESSAGE GIVES A BARBER'S SHAVE"

● The best Shaving Brush made because the rubber massage brush attached to the end of the handle works the soap right into the roots of the beard, and gives the user all the advantages of a Barber's "Rub-in"—the secret of a perfect shave.

● Its selling points are so compelling that customers will not wait until they need a new brush, but will be induced to purchase a "Kent Massage," thereby creating entirely new sales not available by the presentation of ordinary brushes. Retail prices: 5/9, 10/6, 15/9, 21/-.



GENEROUS TRADE DISCOUNTS

Made in England by - Attractive Showcards Supplied - Write for further Particulars and Samples

G. B. KENT & SONS LTD. 75 FARRINGTON ROAD,
LONDON, - - E.C.1

Phone: Holborn 5066-7-8. Telegrams: Tricho, London

are your displays as bright as this!

Do your packs attract your customers' attention—hold it—make them buy? The Veloshave display is remarkably compelling—it sells a brushless shaving cream which has protective and soothing properties. Ask your wholesaler or write to us for particulars of trade terms.

VELOSHAVE

REGD.
BRUSHLESS SHAVING CREAM

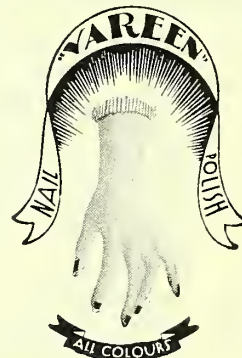


©
"VELOSHAVE," 9 Queen Victoria Street, E.C.4
RENE COS, Ltd., Regd. Office: 44 West George St., Glasgow
FACTORY: Veloworks, Vale of Leven, Scotland

"VAREEN" LIQUID NAIL POLISH

FAVOURITE COLOURS:

Natural	Coral	Blush Pearl	Orange	Carnation
Rose	Deep Rose	Rose Pearl	Lake Red	Dark Red
Pale Coral	Pearl	White	Red	Etc.



NAIL POLISH: 1/- size, 7/6 doz. 1/6 size, 10/6 doz.
2/6 size, 16/- doz.

POLISH REMOVER: 1/- size, 7/6 doz. 1/6 size, 10/6 doz.

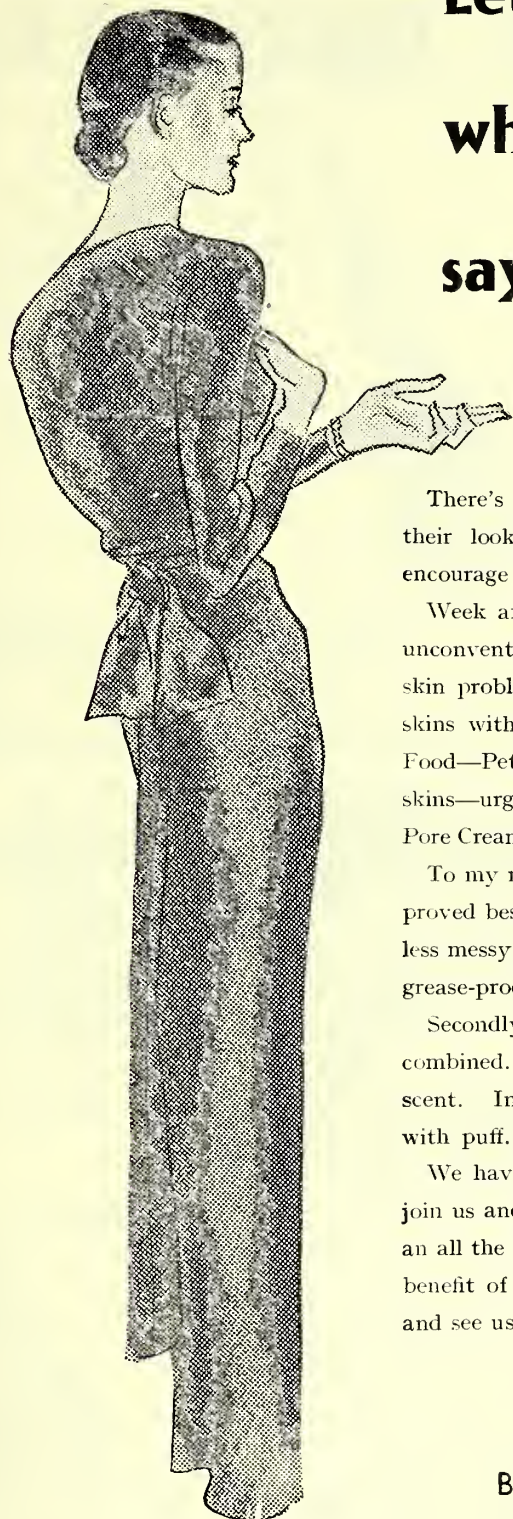
CUTICLE CREAM: 1/- size, 7/6 doz. 1/6 size, 10/6 doz.

VAREEN CUTICLE REMOVER: non-caustic, delicately perfumed. 1/- size, 7/6 doz.

(FROM YOUR WHOLESALER)

Vareen Ltd., 86 Portobello Road, London, W.11

**"Let's make hay
while the sun shines,"
says Jane Seymour**



There's nothing like summer for making women think about their looks! Sunbathing—social functions—outdoor life all encourage vanity!

Week after week, in the women's papers and periodicals my unconventional advertising is defining and solving summer's skin problems. Explaining my simple basic treatment for dry skins with Cleansing Cream, Juniper Skin Tonic, Orange Skin Food—Petal Cream and Dryskin Powder. And for greasy skins—urging the daily use of Cleansing Milk, Astringent Lotion, Pore Cream, Peach Skin Food, Petal Lotion and Greaskin Powder.

To my range this year I have added two lines which instantly proved best sellers. First—my Sun Tan Bloc. Far cleaner and less messy than oil. Far better for the skin. Packed in a handy grease-proof case.

Secondly—my Petal Dusting Powder—a talc and bath powder combined. A perfect deodorant for perspiration—with a delicious scent. In shaker-stop bottles and big attractive 'band-boxes' with puff.

We have three grand selling months still ahead. Won't you join us and share the profits? Jane Seymour preparations have an all the year round sale—but if you come in now you'll get the benefit of the summer impetus. Write for particulars or come and see us.

Jane Seymour

BEAUTY PREPARATIONS

23 Woodstock Street, Bond Street, London, W.1.

AVA

ADVERTISING

IS PILING UP PROFITS FOR ASTUTE CHEMISTS



The advertising for AVA SHAMPOO and AVA COMPACT PERFUMES in leading national newspapers and women's magazines will bring you progressively increasing profits if you make a regular feature of these lines in your window and counter displays.

Feature them to-day and make this forceful advertising work for YOU, as it is doing for thousands of other astute Chemists.

AVA SOAPLESS SHAMPOO

39 shampoos cost 7/6 showing 42% profit. Ask for display material.



AVA COMPACT PERFUMES

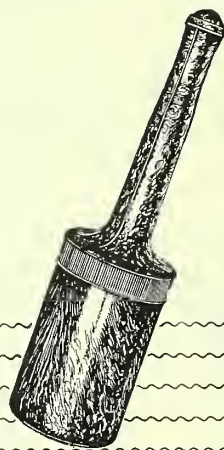
Six Varieties: Gardenia, Lilac, Jasmin, Muguet, Lavender, Violet

ONE SIZE ONLY - 1/- each
Trade Price - 8/- per dozen.

AVA LTD., 9 PARK HILL, LONDON, S.W.4.

The EMPIRE BATHJOY

The latest device for softening and perfuming water



Delicately perfumes and softens the hardest water. Perfumes:—Verbena, Lavender, Eau de Cologne, Dusk of India, and Pine.

Retail Prices
Complete Bathjoy in Bakelite

3/11

De Luxe Model in Beetle

5/11

Refills 1/6 each
usual Trade discounts

BRITISH EMULSIFIERS

An elaborate
Showcard sent
on request.

Teddington, Middlesex

Telegrams:
Briteemulsi, Teddington.

LTD.

Telephone:
Molesley 1202/3

Wanie FOREIGN 9/100
Wanie FOREIGN AUTO TYPE 9/100
Wanie FOREIGN 9/100
8/-GROSS

WANIE

The Blade for Every Razor!

Send for Samples to Dept. C.D.

**LONDON & PROVINCIAL
FACTORS, LTD.**

146 THEOBALDS ROAD, W.C.1

and at

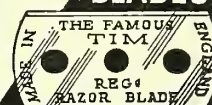
16 WITHY GROVE, MANCHESTER

Enquiries from Irish Free State Invited.

Wholesalers are invited to apply for Trade Terms.

TIM

HAND
HONED



3/9
GROSS
BRITISH
BLADES

HAVE YOU ORDERED YOUR STOCK OF

PAPIER POUDRÉ?

This handy toilet line should be displayed now. SALES ARE INCREASING. Show it and it sells itself. A green and gold display stand FREE with 3 doz. 8d. size and $7\frac{1}{2}\%$ discount on an order for 6 doz.

From all Wholesalers
or direct from:—

PAPIER POUDRÉ LTD. 46 Baker Street, LONDON, W.1

HUNGARIAN SPECIALITIES

HUNGARIAN LILAC OIL, Synthetic

100 gr. oil for 1 kgr. perfume.....14/-
25 " " " 1 litre Toilet Water 5/-

Other perfume compositions at favourable quotations

APRICOT BRANDY COMPOSITION

Favourite drink of highest society—known as Hungarian Speciality

10 gr. Composition 100 litres Apricot Brandy 5/-

Other Brandy Compositions to be had, please apply to:—

KNAPP & CO. Essential Oils Manufacturing Co., Budapest, Hungary

V. Visegradi u. 10. Samples gladly sent by mail, on request against reimbursement

STANDARD SYNTHETICS LTD.

Works, Offices, and Laboratories.

76. GLENTHAM ROAD, BARNES, LONDON, S.W.13.

Phone: RIVERSIDE 3183

Grams STANDCHEM, PUT, LONDON.

BUYERS of raw materials....

....for the manufacture of PERFUMERY, SOAPS, FLAVOURS, TOOTHPASTES, PHARMACEUTICAL PREPARATIONS, HAIR SHAMPOOS, POLISHES, CONFECTIONERY, ETC., will find it worth their while to enquire of Standard Synthetics Ltd. We are renowned for high quality products at competitive prices and for quick deliveries. Ample stocks always held in London.

Distillers
of
Essential Oils
and
Manufacturers
of
Synthetics
and
Isolates

If you require any special materials, or have a problem,
YOU WILL RECEIVE PERSONAL, PROMPT, EXPERT & CAREFUL ATTENTION

Write or phone : J. L. Hindle, B.Sc. (Managing Director), c/o Standard Synthetics, Ltd.

52% of Men have DRY Hair — 48% have GREASY Hair

★ only **ONE** Hair
Fixative caters for
EVERY Customer

—that's why

ANZORA ★

has the Greatest Sale!

THE GOLD MEDAL HAIR CREAM



Anzora has beaten all competitors for 30 years because it is the **ONLY** Hair Fixative to suit every type of hair. To-day it is a household word, backed up by vigorous, consistent advertising.

Anzora stays firm in public favour, but it doesn't stay long on your shelves. For certain sales, rapid turnover and satisfied customers you need Anzora—the only hair fixative that you really **DO** need

ANZORA WAVE-SETTING LOTION
An additional source of Profit! Keeps waves wavy longer and TRANSPARENT Recommend it to your lady customers.

ANZORA PERFUMERY CO. LTD., LONDON, N.W.6

PENNINE
Toilet Series



THORNTON & ROSS LTD.

MILNSBRIDGE, HUDDERSFIELD

THAT SPEED FROM —

2

PROFIT
MAKERS

COUNTER
TO
CUSTOMER

NESTOL

IS IN CONSTANT DEMAND BY MOTHERS
ALL OVER THE WORLD . . .

NESTOL is bought by thousands of Mothers because they know it gives their babies curly hair. One tube lasts a month. Consistent advertising has created a big demand. If you do not stock Nestol already, send now for a trial order complete with attractive showcards.



TUBES TO
RETAIL

3/6 each

28/- Per Dozen

Nestlé
COLO Rinse

An Infallible success—An Immediate opportunity

COLORINSE, the harmless rinse to impart youthful colour sheen to every woman's hair, should be on your counter. The ever-growing demand will bring you many profitable repeat sales. Order your first 4 dozen twins now (each packet contains two rinses). They retail at 6d. for each twin. Four of each of the 12 ColoRinse Shades.



*Display Outer containing
4 dozen twins.*

TRADE PRICE **16/-**

RETAIL PRICE **24/-**

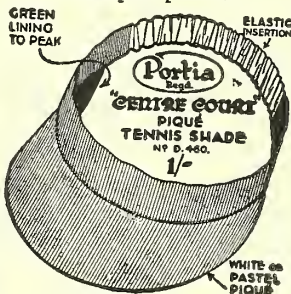
(6d. per twin)

C. NESTLÉ & COMPANY LIMITED
465-467 HOLLOWAY ROAD · LONDON · N.7. Telephone: Archway 1184

Portia

Regd.

THE NEW
"CENTRE COURT"
lightweight piqué
fabric eyeshade—
colours and white—
very stylish!



D 460 @ 8/- dozen.

TELEPHONE: CLERKENWELL 9211 (3 lines)

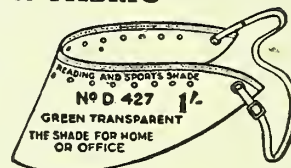
EYESHADES

NON-FLAM & FABRIC

FOR
IMPORTANT EVENTS

TENNIS TOURNAMENTS
AIR DISPLAYS
REGATTAS
ATHLETICS
CRICKET
GOLF etc.

all such sporting events will
lead to increased sales of these
eyeshades to players and
spectators alike.



The popular
NON-FLAM Model
now reduced to
1/- Retail.
Trade 8/- doz.

Very well presented
with display cards, etc.

WRITE FOR ILLUSTRATED LIST

SOLPORT

BROTHERS LIMITED

184-192 GOSWELL ROAD,
LONDON, E.C.1 - England

ORDER
through
your usual
Wholesaler

PETROLEUM JELLIES

WHITE, LEMON, YELLOW, AMBER, RED, GREEN.

WHITE & COLOURED OILS

YELLOW, GREEN, RED FOR BRILLIANTINE, etc.

LIQUID PARAFFIN

COLOURLESS, TASTELESS, ODOURLESS.
ALL SPECIFIC GRAVITIES.

B.P. AND TECHNICAL QUALITIES

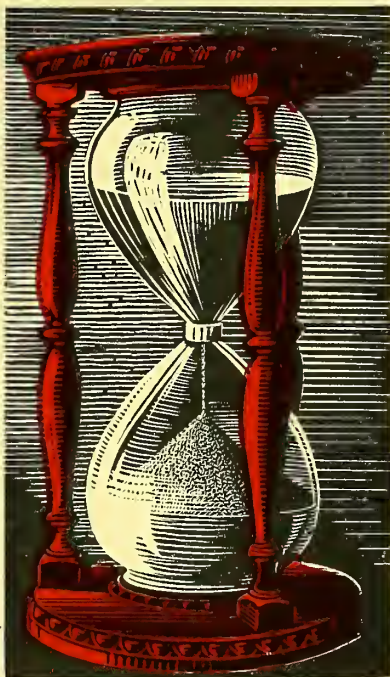
Wholesale Trade only.

STERNS LTD.

16 FINSBURY SQ., LONDON, E.C.2, ENGLAND

Telephone: NATIONAL 7644 (7 lines)
Telegrams: "CENTUMVIR, PHONES, LONDON."





For more than half a century it has been the Lilly Policy to make products of the highest quality—to improve old products and create new ones to meet the changing needs of the medical profession, and to distribute these products only through professional channels

IF IT BEARS A RED

Lilly

—IT'S RIGHT

ELI LILLY & COMPANY, LIMITED

SOLE DISTRIBUTORS IN BRITAIN FOR ELI LILLY AND COMPANY, INDIANAPOLIS, U.S.A.

2, 3 and 4 Dean Street, LONDON, W-1

Telephone: Gerrard 2144

Telegrams: Lillypharm, Rath, London

TRADE
MARK**NORMACOL** BRAND.

Intestinal Evacuant

is now widely prescribed
under the**NATIONAL
HEALTH
INSURANCE****H. R. NAPP LIMITED.**
3 & 4, Clements Inn, London, W.C.2.

Telegrams "NAPPCHEM LONDON" Telephone: HOLBORN 1444 (Two Lines)

ESSENTIAL OILS

RECTIFIED, TERPENELESS

Staff Allens

TINCTURES
SYRUPS
OINTMENTS
EMULSIONS
INFUSIONS
SPIRITS
etc., etc.

EXTRACTS

SOLID, POWDERED, LIQUID

POWDERED DRUGS

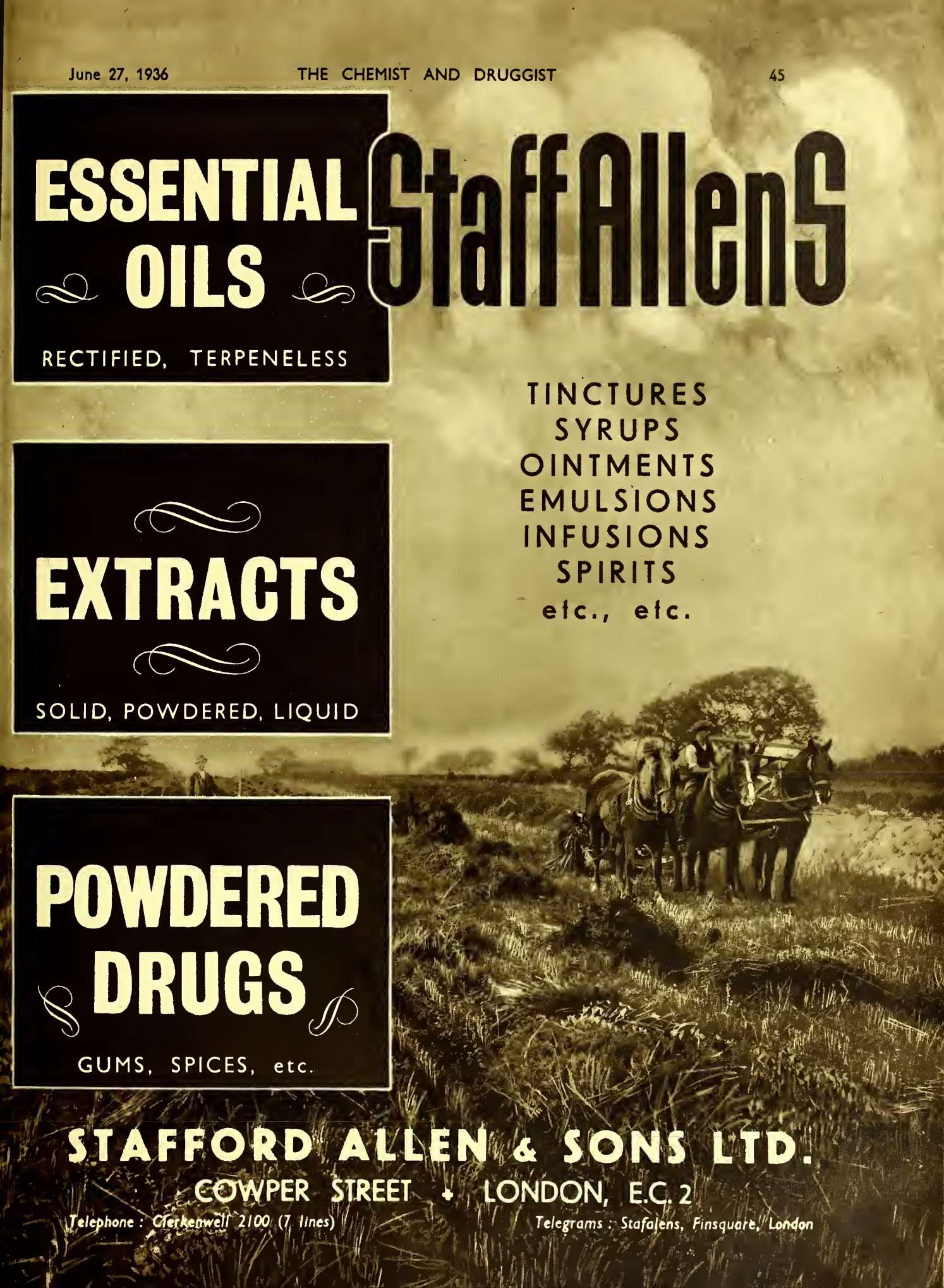
GUMS, SPICES, etc.

STAFFORD ALLEN & SONS LTD.

COWPER STREET • LONDON, E.C. 2

Telephone : Clerkenwell 2100 (7 lines)

Telegrams : Stafalens, Finsquare, London



Everything for the Chemist



Original warehouse acquired in 1916. Now used as Offices, Showroom, Patent Medicine & Photographic Showrooms. Five stories high (the basement and top floor cannot be seen in this photograph).

★ DRUGS, GALENICALS,
PHARMACEUTICAL CHEMICALS,
TABLETS, PILLS, PACKED
GOODS, SURGICAL DRESSINGS,
SUNDRIES, PATENT MEDICINES,
and all
PHOTO & ELECTRICAL GOODS

Enquiries invited
from the Trade
in the
British Colonies
and
Protectorates



New warehouse built by us in 1920, immediately behind and attached to the above building. This building is used mainly for manufacturing and storage purposes, and has a floor area of about 5,000 square yards.

Packers of
HIGH CLASS
SPECIALITIES
for the
HOME and
EXPORT
TRADE

40 YEARS' CONTINUOUS PROGRESS

The result of our successful
combination of highest
quality, competitive prices,
and speedy delivery



New warehouses immediately opposite the above, bought in 1933, with a floor area of about 1,500 square yards and a similar area available for further extensions when required.

Our quotations are distinctly interesting—send us your next enquiry

BROOK, PARKER & CO. LTD.

MANUFACTURING & EXPORT CHEMISTS

7, 9, 11, ASHFIELD, HORTON ROAD _____ BRADFORD

ALKALOIDS & FINE CHEMICALS DRUG GRINDING ESSENTIAL OILS VERMILION

BROMIDES
WHIFFEN
IODIDES

WHIFFEN & SONS, LIMITED

INCORPORATING GEORGE ATKINSON & COMPANY ~ ESTABLISHED 1654

FULHAM, LONDON, S.W.6

Telegrams : " Whiffen, London "

Telephone : Fulham 0037 (3 lines

*Tan
without
tears*

*A link between
SUNSHINE
and
SALES*



PREVENTS AND RELIEVES SUNBURN

NURONA



SUN TAN CREAM

Also
NURONA
Sun Tan Cream,
without colour,
at the same price

This attractive coloured
showcard is a very seasonable
sales-aid for NURONA Sun Tan Cream.

It is helping enterprising chemists everywhere to
reap the benefits of the extensive national publicity scheme
which is making NURONA known to millions of holiday makers.
Don't miss the opportunities which NURONA is creating for you! Keep
up your stocks and profit from the steady summer demand. Remember that
NURONA is the triple-purpose cream. It prevents sunburn . . . encourages
rapid tanning . . . and is a soothing application after over exposure. It is
handsomely packed and popularly priced, non-greasy and pleasant to use.

WN 12

JAMES WOOLLEY SONS & Co. Ltd., VICTORIA BRIDGE, MANCHESTER, 3

SUCCESS *leads* to SUCCESSES



The popularity of NURONA Sun Tan Cream is creating sales for this ATTRACTIVE TOILET SERIES

NURONA Sun Tan Cream—so popular last year—so widely advertised this—is already an established success. Now it invites sales for its pleasing companions—NURONA TOILET SERIES.

With their attractive bottles and moulded screw caps they invite sales at once. But with the name NURONA—soon to be a byword on every holiday beach—they are sure of a ready acceptance. The same effectiveness in use evidenced in the Sun Tan Cream is present in every one of these toilet requisites—and at the same reasonable price to encourage a popular demand.

The NURONA Toilet Series is really excellent value and a full range is available.

4 oz. - - 1/- Retail, 8/- doz.
8 oz. - - 1/9d. „ 14/- doz.

SPECIAL TERMS FOR QUANTITY PARCELS

NURONA

TOILET SERIES

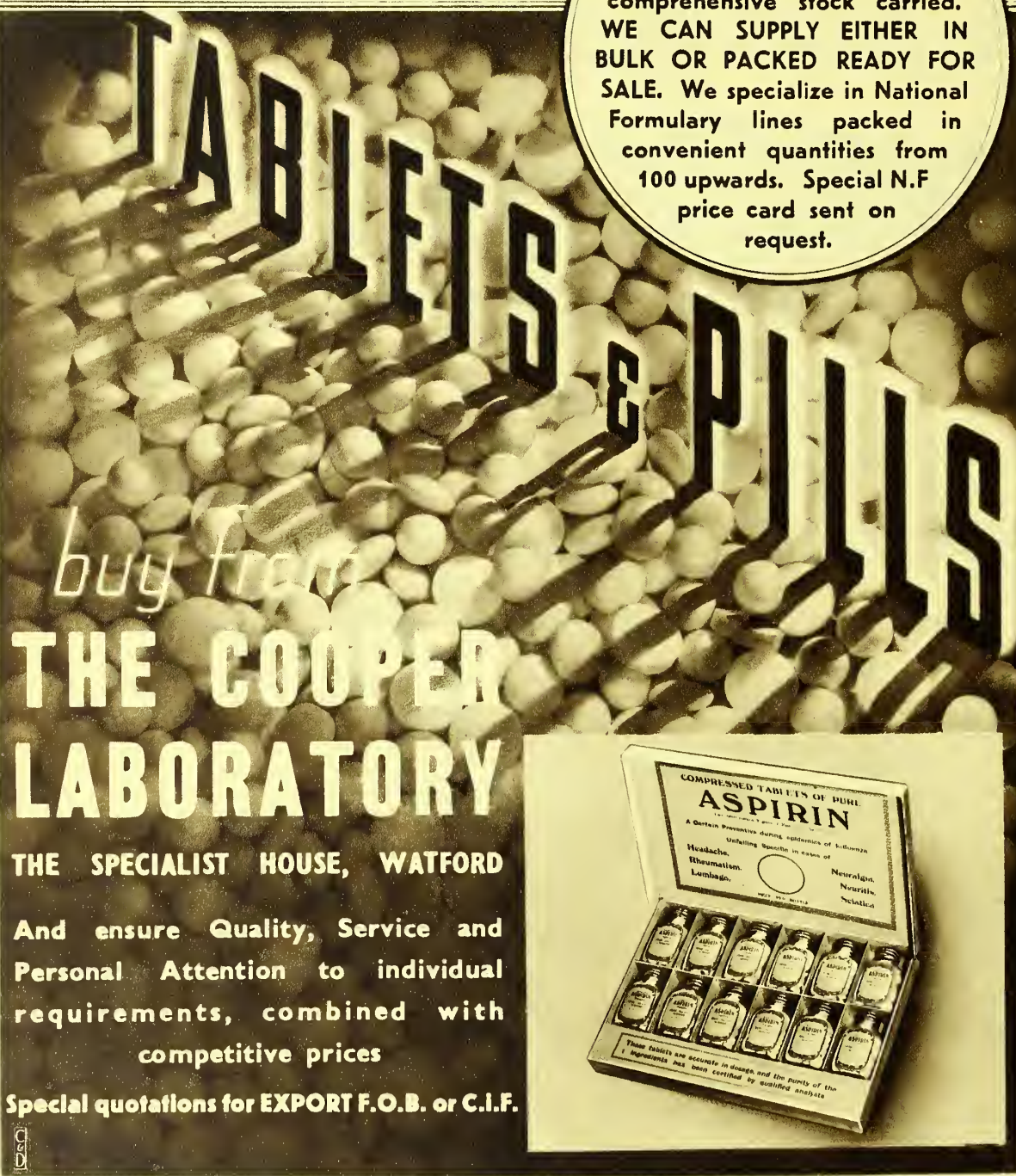
JAMES WOOLLEY SONS & CO. LTD.,
VICTORIA BRIDGE, MANCHESTER, 3

WN 13



A FULLY-EQUIPPED PRINTING DEPARTMENT provides for every requirement ranging from own name labels for the retail Pharmacist to the preparation of special packs and literature for advertised proprietaries.

A FULL RANGE OF STANDARD TABLETS AND PILLS is manufactured and a comprehensive stock carried. WE CAN SUPPLY EITHER IN BULK OR PACKED READY FOR SALE. We specialize in National Formulary lines packed in convenient quantities from 100 upwards. Special N.F. price card sent on request.




buy from
**THE COOPER
LABORATORY**

THE SPECIALIST HOUSE, WATFORD

And ensure Quality, Service and
Personal Attention to individual
requirements, combined with
competitive prices

Special quotations for EXPORT F.O.B. or C.I.F.



SPECIAL FORMULÆ. The preparation of Tablets and Pills to customer's private and special formulæ receives the greatest care and attention. Any quantity, small or large.

OUR COMPREHENSIVE PRICE LIST WILL HELP YOU TO INCREASE SALES, WRITE FOR IT NOW

GENERAL ANAESTHETICS OF REPUTE

CHLOROFORM Anaesthetic**ETHER** Anaesthetic**" BAKER'S "**

Quotations on application

PHARMACEUTICAL SPECIALITIES
(MAY & BAKER) LTD.
Dagenham

PHONE: ILFORD 3060

Look out for the New Presentation
of **Mercolized
wax**



New Container,
New Carton,
New Display
Materials will all
stimulate sales of
this well-known
product.



Dearborn (1923) Ltd

37 Gray's Inn Road, London, W.C.1

counter attractions



Sheer hard facts are what you want. Here are a few about the VENO Products.

No family remedies enjoy a better goodwill than these. Each is literally a household word.

Advertising now, as it has been in the past, is consistent, widespread and forceful. The day-to-day demand for these lines never flags.

Sales, though enormously high, are again rising. In face of these facts, isn't it worth it to YOU not only to stock, but display the Veno Products? Write for free show material and our generous trade terms.

VENO

DRUG CO. LTD.

CHESTER RD., MANCHESTER, 16

ESTD



1751

WILLOWS GALENICALS

WILLOWS · FRANCIS · BUTLER & THOMPSON

LIMITED

MANUFACTURERS OF
PHARMACEUTICAL PREPARATIONS

LAXAROL

TABLETS

FOR THE PHYSIOLOGICAL TREATMENT OF CONSTIPATION

containing

BILIARY AND INTESTINAL SECRETIONS WITH
AGAR AGAR AND LACTIC FERMENTS

73-75 & 89^A, SHACKLEWELL LANE,
DALSTON, LONDON, E.8.

Telegrams :
"FORTY, HACK, LONDON"

Telephone :
CLISSOLD 6361 (4 lines)

PROMPT DISPATCH GUARANTEED

IN THE HOUSE OF COMMONS YESTERDAY, A. D. 1854.

THE SECRETARY OF THE TREASURY, in proposing the Bill for the Amendment of the Act in relation to the Revenue of the Colonies, said that he had the pleasure to announce to the House that the Bill had been passed by the House of Commons yesterday, and that it was now on its way to the Statute-book, and would become effective in three years' time. It has been substantially improved in Committee, notably by Mr. STANLEY's declaration in favour of the "unbroken term." Not all the amendments proposed by the experts have been accepted; but it has been made clear to the local authorities, on whom by tradition the success of the Act will depend, that it is intended to be a workable measure. Many still feel that too much responsibility has been put upon the authorities, and that it would have been better if the intentions of Parliament had been made clear in the text rather than in the Minister's speeches. It is some consolation, at all events, that the record of the majority of these authorities inspires confidence that all that the Act makes possible will be carried out.

In the interval between the passing of the Act and the coming into operation of the new system of

these are the most
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Act

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197

It is the interval between the passing of the bill and the coming into force of the main concern of the authorities will be the reorganization of the existing and other schools, and in some cases the building of new ones with the help of the Government to be provided. The proposal just made by the Hon. DE LA WARR that more attention should be given to the architecture of schools is timely. He suggests that a committee should be held for plans providing for the school building. To-day the Royal Institute of British Architects write to give them their "entire support" to the proposal. The committee would be composed of small firms, and it is suggested for the various districts and towns. For technical schools, the Government cannot be supplied by the private sector, which has every system of education in the world, and therefore it will be necessary to have a DE LA WARR committee to consider the building of new and bodies of instruction. There are many schools in this country which cannot afford to provide money to build new schools. The Government is not up in the air, but is looking for a way to develop the system. When the Government is on the subject, it is not a fair was to be for more than for the teachers requiring the necessary conditions if the Government is possible and those

An illustration of three large, vintage-style toothbrushes standing upright. Each toothbrush has a dark handle with the brand name 'GALE'S' and a price tag '1/-' (one shilling) printed on it. The toothbrush heads are white with dark bristles. In the foreground, three children in traditional attire are running towards the toothbrushes with expressions of excitement. The background is a plain, light color.

THREE CHEERS

for the
three best
shilling
brushes

Everyone's own pet shape
— for only a shilling. Trans-
parently sealed so no one
can touch it till you do.
Coloured, so you know
what is yours at a glance.
Filled with well-trained
birds that know their place.

Issue,
 a closer under-
 n of this country
 nions, was most
 with appreciation
 ight I then seize
 lead for a wider
 at Britain of the
 development of

ill a tendency to
Commonwealth's
and that protection.
Australia of pro-
m. It is readily
iff must influence
should be obvious
is not material;
of British imports

Halex Toothbrushes—6d. to 2/-—nine different shapes in all. Halex Dental Plate Brush in six colours—2/6. Halex Shaving Brushes—Pure bristle 5/-. Pure badger 15/-. Ladies' Pneumatic Hairbrush 12/6. Men's Military Pneumatic Hairbrush 10/6. • Halex is the Registered Trade Mark of THE BRITISH XLYONITE COMPANY LIMITED, HALE END, E. 4

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tempting twelve million!

Up go the Halex sales! 12,595,755 families★ are seeing these irresistible Halex advertisements. The toothbrushes seem to jump out of the paper—tempting the reader to look and *buy*! We're featuring our three big SHILLING lines. And they are selling as fast as we can make them. SOMEONE is getting a lot of extra toothbrush business. Are you? You will if you feature this Halex Showstand. Hear your customers say:—"I saw these toothbrushes advertised in the paper. I'll try one—this one!"

★ 12,595,755—that's the circulation of HALEX advertising now appearing in:—

RADIO TIMES
Daily Express
Daily Mail
Daily Herald
News Chronicle
Daily Mirror
Daily Sketch
Glasgow Bulletin

Home Chat
Home Notes
Lady
Miss Modern
Modern Woman
People's Friend
Wife & Home
Woman & Home

Everywoman's

H A L E X
Regd. Trade Mark
ARE MADE IN ENGLAND

Order from your usual wholesaler, or from
THE BRITISH XYLONITE COMPANY LIMITED,
HALE END, E.4

C C

ESCALE (REGD.)

The ideal Travelling Spray



- NO RUBBER
- NO LEAKING
- NO SPILLING

CHROMIUM FITTINGS
EACH IN PLAIN LEATHER CASE

Retail 30/-

Usual Trade discounts

OF WHOLESALEERS OR DIRECT FROM

MARCEL FRANCK & CO (LONDON) LTD

150 MOUNT PLEASANT, ALPERTON, MIDDX.



REID'S
Bamyl
REGD.

PINE TAR
SHAVING
SOAP
AND
TOILET
PRODUCTS

Plain and Mentholated



*They are different
— try them*

Profit Margin

33 1/3%

SELLING PRICE

**B
A
M
Y
L**

Shaving Stick (Bakelite container)	1/-
Shaving Stick (Cardboard refill)	9d.
Shaving Stick "JUNIOR"	6d.
Shaving Cream	tube 1/-
Toilet Skin Soap	tablet 6d.
Liquid Shampoo (Non-Spirit) bottle	1/-

*Display Cases, Showcards, Pamphlets,
Attractive Samples for distribution*

SOLE MAKERS

ESTAB. 1868

Thomas Reid & Sons Ltd., Glasgow

"ODENTIC" PLATE BRUSH

Regd. No. 417637.



From all
Wholesalers.

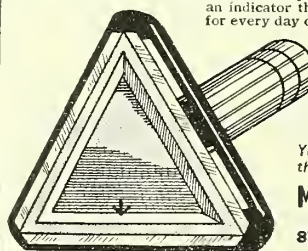
Manufacturers :

W. R. Speer & Son (EST. 100 YEARS)
215 DALSTON LANE - LONDON, E.8

6D

MAKTOR SAFETY RAZOR

WITH ONE
REVERSIBLE
BLADE



Whether your beard is fine, medium or tough, a perfect shave is *always* assured with the MAKTOR because of its specially designed, adjustable 3-way gap. The MAKTOR has many other exclusive features, including an indicator that clearly shows the correct edge for every day of the week as marked on the blade.

The 6d. complete outfit consists of handsome heavily plated razor, moulded guard and 1 Maktor Hollow ground Blade made from finest grade DIAMOND HARD SHEFFIELD STEEL ground and finished by hand control. Additional blades 3d. each.

Yorkshire Agents: Abbey & Lawthorne, Barton - le - Street, Malton.

MAKTOR SAFETY RAZOR CO., LTD.
87 SOUTHWARK STREET,
LONDON, S.E.1

Eclipse

SPECIALITIES

for the
**MODERN
CHEMIST**

"ECLIPSE" RED RING RAZOR

with magnet in handle for picking up blades; takes any type of double-edge wafer blade.

3/6 and 5/6

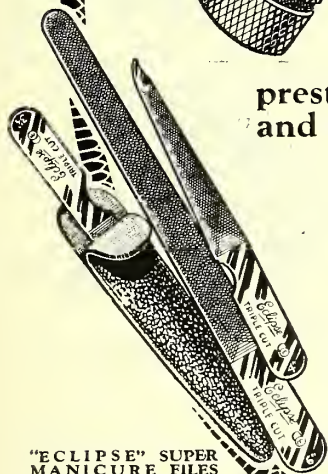


"ECLIPSE" SUPER RAZOR BLADES

are known and appreciated throughout the world for their consistency both as regard keenness of edge and lasting value.

3 for 1/-

'Eclipse' Toilet Specialities are made to a fine standard of excellence. They provide not only a generous profit on sale but enhance the prestige of the Chemist by their long and superior service to the user.



"ECLIPSE" SUPER MANICURE FILES

Finest Stainless Steel in Professional and Thumb patterns—the latter having finger tip recess for ease of nail cleaning. Supplied, carded in dozens, assorted or in attractive Display Box.

5d. to 3/6 each



'ECLIPSE' Red Ring SHAVING BRUSHES

A range of good quality brushes retailing from 2/6 to 25/- each. Guaranteed Sterilized.

'ECLIPSE' Red Ring NAIL SCISSORS

With finger tip recess and grooved nail file. Sheffield made from high-grade steel, chromium plated. Packed in individual cartons or leather cases and put up in display boxes of 1 dozen.

2/9 cartons. 3/4 leather cases



"ECLIPSE" RED RING MANICURE SCISSORS

High-grade Chromium Plated Scissors with curved ends. Packed in individual cartons and display boxes of 1 dozen

3/6 each

Obtainable from your usual Wholesaler or direct from

JAMES NEILL & CO (SHEFFIELD) LTD., SHEFFIELD. II.

E.116.

A Standard Remedy for Hay Fever and Catarrh

EPHEDROL

BRAND



Offer hay-fever sufferers the welcome and certain relief of Ephedrol—the Standard Remedy for this distressing summer complaint. Ephedrol, by application direct to the affected part, provides really speedy relief. It is inhaled from a patent nasal bottle—a method of treatment which is safer and more hygienic than a spray dropper or nasal douche—and has been endorsed by leading laryngologists and medical authorities.

Ephedrol also brings relief in cases of Summer Colds and Catarrh.

To the Chemist, Ephedrol offers generous profit—and the prestige which always follows the sale of a good product. Printed matter and display material are available.

78% PROFIT TO YOU

3/- retail - 23/- per dozen

3 dozen lots - 22/- per dozen

1/6 retail - 12/- per dozen

3 dozen lots - 11/- per dozen

Bonus of 1 to every doz. Carriage paid on 3 doz.

FOR ASTHMA WHOOPIING COUGH AND BRONCHITIS

The foremost medical authorities have used and approved EPHEBAN Brand Powders for ASTHMA, Bronchitis, etc. Ephedan powders have the full Ephedrine content, yet, unlike tablets, no cautionary label is necessary under the New Poisons Act.

They are completely effective in relieving even the worst cases of asthma—and have sometimes resulted in a complete cure. They are quick in action—ten times quicker than tablets—and provide certain relief in five to twenty minutes.

EPHEBAN Brand Powders offer 62½% profit on cost to the Chemist.

Protected Retail Price :—2/6 Wholesale, 20/- per dozen. Bonus of 1 to every dozen on three dozen orders.

EPHEBAN

BRAND

*The
SAFEST
cure*

**UNRESTRICTED
BY POISONS ACT**



An IODINE or MOSQUITO PEN for 3d.

This new "Canda" Iodine or Mosquito Pen has introduced a new standard of value. Though so wonderfully cheap, it lacks nothing in appearance or efficiency. It provides clean and handy first-aid at a price which opens up a market so extensive and productive that no chemist can afford to ignore it.

For IODINE, MOSQUITO and MIDGE application only. Packed in attractive boxes for counter display—1 dozen per box. Price 2/- per dozen.

CLAY & ABRAHAM LTD., Manufacturing Chemists, LIVERPOOL

London Agents: **THOMAS & LINTON LTD., 4 GRAY'S INN ROAD, LONDON, W.C.1**

Export Agents: (NOT for Ephedrol), except for New Zealand and Australia: **Wm. Alfred Jones, Ltd., Maryland Street, Liverpool**

"HARLENE"

TOILET PREPARATIONS



"Harlene" Toilet Preparations, famous for 50 years for quality and merit, are ever increasing in popularity. Always backed by an extensive National Advertising Campaign, these real best sellers enjoy a regular and steady demand.

See that you hold ample stocks to meet the demand in your district for these popular lines. A postcard brings full particulars.

EDWARDS HARLENE LTD.
20/26 LAMBS CONDUIT STREET, LONDON, W.C.1

*Lightest, Medium, Dense, for Tooth Pastes and
Tooth Powder; and other Grades for every
purpose*

PRECIPITATED CHALK

(Calc. Carb. Præcip.)

Also *Finest Powdered Talc* and other **Chalks**

A. LEVERMORE & CO. LTD.
110 Cannon Street, London, E.C.4

Estab. 1868. Telephone: MANXION HOUSE 7300.

Telegrams: LEVERMORE, PHONE, LONDON.

Code: "ABC 6th Edition."



IMPROVED TANNIC ACID OUTFIT FOR BURNS

The Tannic Acid treatment of burns by means of a spray has been recommended for several years, but the importance of using a freshly-made solution of Tannic Acid has prevented its universal adoption. The introduction of compressed tablets has now made it possible to produce the required solution in a few minutes, as recommended in the "British Medical Journal" of March 18th, 1933. The outfit consists of an amber bottle, with vulcanite spray, together with a supply of tablets, as illustrated.

Price **4/6**

G. J. HEWLETT & SON, LTD., 35/42 Charlotte Street, LONDON, E.C.2

DRUGS

**PHARMACEUTICAL
SPECIALITIES**

PURE FOOD COLOURS

ESSENTIAL OILS

ESSENCES



BLACKWELL HAYES & Co. Ltd.
54-58 MOOR ST.
BIRMINGHAM

'Phone: Central 1267

Wires: Blackwelaze, Birmingham



For the complexion

These Yeast Tablets may now be obtained in the following sizes

1 doz.	50 Tablets
1 "	100 "
2 "	50 "

50 Tablets 7^d. 100 Tablets 1/.

Discounts: Retail 33 $\frac{1}{3}$ %. Wholesale 16 $\frac{2}{3}$ %.

Carriage paid on all orders.

Calder yeast.. tablets

Supplies of Calder Yeast Tablets may be obtained through Wholesalers.

CALDER'S' YEAST CO LTD

INVERKIP STREET, GLASGOW, C.5.

"CLARKES"

Brand

World-famed Blood-purifying Medicine

"BLOOD MIXTURE"

Registered Trade Mark

UNSTAMPED, FOR SALE BY CHEMISTS ONLY

P.A.T.A. PRICES

"CLARKES" Brand BLOOD MIXTURE
(Liquid and Tablets)

Retail 3/- 3 doz. lots £4-4-0 less $3\frac{3}{4}\%$ one month
12 " " £16-16-0 " $8\frac{3}{4}\%$ " "
CARRIAGE PAID PACKING FREE

ASSORTED ORDERS

"CLARKES" Brand	Retail	Per Doz.
"BLOOD MIXTURE" (Liquid)	1/9	16/4
" " " "	3/-	28/-
" " " "	12/-	112/-
"BLOOD MIXTURE" (Tablets)	1/9	16/4
" " " "	3/-	28/-
" " " "	5/-	46/8
SKIN LOTION	1/3	11/8
SALVE	1/3	11/8
" " " "	3/-	28/-
" " " "	5/-	46/8
APERIENT PILLS	1/3	11/8
" " " "	3/-	28/-
MEDICATED SOAP		Doz. Tablets
Box 3 Tablets	2/6	7/10
Single Tablets	1/-	

Orders may be assorted as desired at above rates provided they reach minimum values, as follows:—

£4-4-0 less $3\frac{3}{4}\%$ one month

£16-16-0 " $8\frac{3}{4}\%$ " "

CARRIAGE PAID PACKING FREE

ORDERS may be sent direct or through the usual wholesale houses

The Lincoln & Midland Counties Drug
COMPANY, LIMITED

PARK STREET, LINCOLN

Telegrams: "Lindum, Lincoln" Telephone: Lincoln 55

"PRU-LAX"

The all-vegetable laxative; no mercurial or phenol-phthalein constituents used.

The season is here and here is the right product for a safe and pleasant laxative natural in its action and equally suitable for adults and children.

Write to-day for samples.

"Pru-Lax" is packed in display outers of 18 tins with Showcard material.

Price 5/- per dozen—retailing at $7\frac{1}{2}$ d. per tin.

ROBERT GIBSON & SONS LIMITED
HULME ————— MANCHESTER

and 5 New Zealand Avenue, Barbican, LONDON, E.C.

TEASDALE Brand CHLORODYNE

FIXED MINIMUM RETAIL 1/3 and 3/-

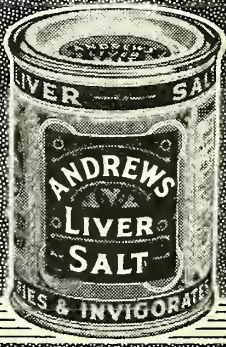
REDUCED PRICES 11/- & 27/- PER DOZ.

Consistently Advertised to the Public

Teasdale Brand Chlorodyne is not affected in any way by the Pharmacy and Poisons Act of 1933 and may be sold by all Chemists as before.

Order to-day from your Wholesaler

The Saline with the largest Sale —



9⁰ & 1⁴



The Attraction of Colour!

DRAW AN APPLE

Most of us at some time or another have attempted to draw an apple, but with what results? We fear the majority have been compelled to write the word "APPLE" underneath our effort. On the left we give a reproduction of what our artist thinks an apple should be like.

The most perfect drawing however, badly reproduced, is a complete failure, and only the skilled craftsmanship of the printer can emphasise the life-like appearance of the artist's design.

Although we do not profess to be fruiterers, we do profess to be printers capable of producing the right kind of pack for your goods, the kind that will persuade your customer to buy; for after all print is to sell.

THOMAS WAIDE & SONS LTD.,
KIRKSTALL HILL, LEEDS, 5



"Polly Wolly Doodle"

Last Friday I was discussing printing with a certain gentleman, and in reply to a statement of mine, he said: "You're wrong; my customers don't care about the kind of printing I send out."

So I replied: "Perhaps not, and I don't suppose they worry about the kind of underwear you buy, neither do they care if you shave yourself, or let the barber do it. They don't care if you blow your soup cold, eat peas with a knife, or drink tea out of a saucer. Of course they don't care. Why should they? They can always do business with someone else."

When you hear things like that, can you wonder at the meddlers and the muddlers pulling long faces? Even our own trade have made a perfect blunder, at least I think so, when they tell you to "Print more—Sell more," and when I see some of the things people are sending out as their printed representatives, I get disgusted with listening to the old tune, "Polly Wolly Doodle All The Day."

I only wish they had told you to print more **WISELY**, because the kind of printing which will speak well of you and help you to **SELL** more does not just "happen," but it does call for a lot of careful thought. This costs no more if the printer is willing to do it, and you gain quite a lot in satisfaction and peace of mind.

Thomas Waide & Sons Ltd., The Printers of Kirkstall Hill, Leeds, will be pleased to co-operate with business men who use Printing for the development of more trade. Enquiries addressed to our Service Dept. will be carefully attended to.

Telephone 52653

BUSH *for*

ESSENTIAL OILS

particularly

ALMONDS	ENGLISH
CEDARWOOD	ENGLISH
CINNAMON	ENGLISH
CLOVES RECT.	ENGLISH
GARLIC	ENGLISH
GINGER	ENGLISH
GRAPE FRUIT	CALIF
LAVENDER	ENGLISH
LEMON	W. J.B.
ORANGE	W. J.B.
PEPPERMINT	ENGLISH
SANDALWOOD B.P.	BUSH

PERFUMES FOR SPRAYS AND DEODORIZERS

FLAVOURING ESSENCES

HARMLESS FOOD COLOURS

and

PERFUMERY MATERIALS

particularly

BENZOPHENONE
CITRONELLOL
COUMARIN
GERANIOL
HELIOTROPINE
HYDROXY-CITRONELLOL
PHENYLACETALDEHYDE
PHENYLETHYL ALCOHOL
TERPINEOL
VANILLIN
VIOLET, ALPHA and BETA
& COMPOUNDED PERFUMES

FINE CHEMICALS

ACETANILIDE	GUAIACOL CRYSTALS B.P.
ACID BENZOIC B.P.	GUAIACOL LIQUID B.P.
ACID SALICYLIC B.P.	GUAIACOL CARBONATE B.P.C. DAB 6
AMYL ACETATE	METHYL SALICYLATE B.P.
ASPIRIN "FRE-FLO" BRAND	PARALDEHYDE
BENZALDEHYDE	SODIUM BENZOATE B.P.
BENZYL ALCOHOL	SODIUM SALICYLATE B.P.
BENZYL BENZOATE	TERPIN HYDRATE

W. J. BUSH & CO. LTD.
ASH GROVE, HACKNEY, LONDON, E.8.

TELEPHONE: CLISSOLD 0461
TELEGRAMS: TANGERINE,
LONDON

and AT

MITCHAM (SURREY), WIDNES (LANCS), NEW YORK, MONTREAL, MELBOURNE,
SYDNEY, JOHANNESBURG.

RAIMES, CLARK & CO., Ltd.

ESTABLISHED 1816.

**Drugs, Chemicals, Galenicals
Malt Extract, Gelatine Capsules
Etc., Etc.**

*Manufacturers of Potassium Iodide, Resublimed Iodine
and Iodine Preparations*

Proprietors and Manufacturers of
MACLEAN'S REVALENTA

The Perfect Food for Children, Adults and Invalids.

RAIMES, CLARK & CO., Ltd., Manufacturing Chemists,
and Wholesale Druggists, **EDINBURGH**
Telegrams: "Raimes, Edinburgh." 'Phones: LEITH 893, 894, 895, 896.

Rivista Italiana delle Essenze, dei Profumi e delle Piantе officinali

EIGHTEENTH YEAR OF PUBLICATION

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Director : - - - - Dr. EMMA FENAROLI

Editorial Offices : - VIA S. VINCENZO N.38 MILAN

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facturers of Articles used in the Perfumery Trade—This is
the Periodical in which to Advertise effectively in Italy.

MAKE USE OF ITS ADVANTAGES

SAMPLE COPY AND TARIFF ON REQUEST

*Ciba Brand
Pharmaceutical
Specialities*

**CIBA
LIMITED**

40 SOUTHWARK STREET, LONDON, S.E.1

Telephone: 'OP 1241

Telegrams: CIBADRUGS, BOROH, LONDON

CORAMINE—CALCIO-CORAMINE
PERCAINE—PERCAINAL
DIAL—DIDIAL—CIBALGIN
SISTOMENSIN—AGOMENSIN
PROKLIMAN—ANDROSTIN
COAGULEN-CIBA—LIPOIODINE "CIBA"
ELBON "CIBA"—RESYL, etc., etc.

A new Price List giving full particulars regarding preparations
affected by the Poisons Rules will gladly be
sent on request.

DERMALON

PREPARATIONS

for the Treatment of DISEASES OF THE SKIN
and Preserving it from ill effects of Rough and Wintry Weather

★ DERMALON OINTMENT (UNGUENTUM DERMALON GALE)

An Ointment containing the principal constituents of Birch Tar, combined with the Oleates of Bismuth, Zinc, etc.

A valuable and efficacious Antiseptic Preparation for general use in skin diseases. Excellent results have been obtained from its employment in cases of Eczema, Psoriasis, Acne, Pruritis, etc. It is also found to be of much service for burns, scalds, boils, etc.

★ DERMALON DUSTING POWDER GALE

An excellent soothing application for irritable surfaces, especially acceptable where a NON-GREASY preparation is desired. Flesh coloured and is exceedingly pleasant to use.

★ DERMALON SOAP GALE

An excellent Antiseptic SOOTHING SOAP, admirably adaptable for NURSERY and TOILET purposes. The essential ingredients of "Ung. Dermalon, Gale" are incorporated in a specially prepared SUPERFATTED SOAP.

GALE BAISS & COMPANY LTD.

CANTERBURY ROAD, LONDON, S.E.15

5%

DISPLAY ALLOWANCE
ON ORDERS OF 1 DOZEN

INNER - CLEAN

P.A.T.A. prices
2/6 size — 22/6 doz.
4/6 size — 40/6 doz.

Order now this nationally advertised
Herbal Laxative on the above dis-
count terms from your usual whole-
saler or direct from the sole agents:

BROOKS & Warburton, Ltd.

232-240 Vauxhall Bridge Road
LONDON, S.W.1

NEOKLENZ NATURE CURE

Ready to take in its natural state.

Cures Constipation and Rheumatism.
Cleanses the Liver and Kidneys.

9d. size 5/- per Doz.

1 Gross Free Samples with 3 Dozen.

Dr. NORMAN'S ASTHMA CIGARETTES

9d. size 6/- per Doz.

Smartly packed and Showcards.

ATLAS KATTLEKURE

The Wonder Ointment.

1/6 size 12/- per Doz.

2/6 " 20/- " "

5/- " 40/- " "

Your enquiries are invited and appreciated.

Sole Proprietors:

CARTER BROS., SHIPLEY, YORKS.

BURROUGH'S

TRY OUR EXTRA RECTIFIED

FOR YOUR PERFUMERY

SVR

FOR YOUR TINCTURES

Absolute Alcohol

DUTY PAID
and
DUTY FREE
for
EXPORT
and
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Containing Bismuth, Magnesia, Pepsin, Bicarbonate of Soda and Peppermint. 7 lbs., 2/9 per lb.; 14 lbs., 2/8 per lb.; 28 lbs., 2/7 per lb.; 1 cwt., 2/6 per lb.

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Retail Price: 4 oz. Bottle, 1/-; Winchester (½ gal.) 7/6; Gallon Can, 12/6.

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C.M.X. Pessaries are most useful in all inflammatory conditions of the Vagina and Uterus in females of all ages. Their employment is particularly indicated in the treatment of obstinate cases of Utero-Vaginal Catarrh (Leucorrhoea).

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Equivalent in germicidal activity to pure Carbolic Acid (Rideal-Walker test).

This non-toxic stainless cream is quite harmless to normal skins. Is most useful in Midwifery as its consistency enables it to penetrate rugae, cavities, etc., with ease.

Retail Price: 1/- per tube.

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Specially prepared for sterilising metal instruments, rubber gloves, bougies, catheters, etc. It does not affect steel, nickel or chromium-plated instruments and these may be immersed indefinitely.

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ELIXIR BROMO-VALERIAN COMP.

An excellent Calmative and Nerve Sedative free from any disagreeable taste or odour

Each fluid drachm (4 c.c.) contains:

Strontii Bromidi	5 grs.	Tinct. Adonis Vernalis	5 m.
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Useful for functional nervous affections, particularly in controlling epileptic seizures. 2/9 per 8 oz. bottle. 5/- per 16 oz.

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For High Blood Pressure

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The employment of Hipanthycal is indicated in Hyperpiesis and is especially useful in Arterio-sclerosis. It reduces the systolic pressure with relative little change in the diastolic and a lower pulse pressure results. This is effected without any depressing effects on the patient.

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A palatable and effective hæmatinic of particular value in the treatment of pernicious anæmia and in anæmias due to defective nutrition. Price: 4/6 per 8 oz. Bottle; 16 oz. 8/6; In bulk, 8/- per lb.

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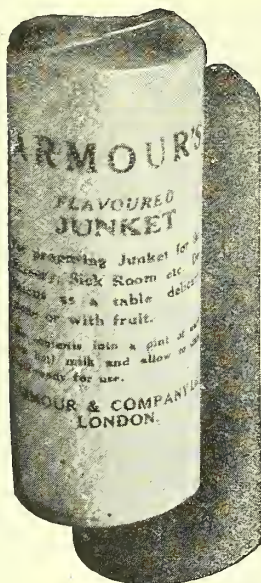
COMPOUND ELIXIR. A Pleasant and Effective Stimulant and Tonic

NUCLEOMINA is especially useful in post-influenzal debility, neurasthenia, convalescence after surgical operations and in cases of faulty calcium and phosphorous metabolism.

Dose: Adults—One to four fluid drachms (4 to 16 c.c.) as prescribed. Children—15 to 60 mins. (1.4 c.c.) according to age.

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June 27, 1936

THE CHEMIST AND DRUGGIST

73



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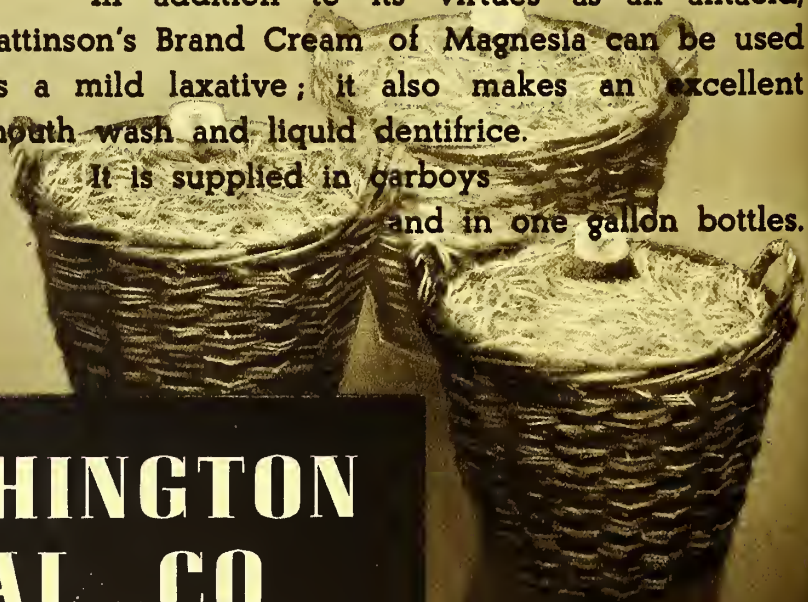
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A NEW RANGE OF SUPERIOR TOILET
PREPARATIONS "RESERVED
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ATTRACTIVE PACKINGS IN 2 oz. DAINTY
WHITE FLINT, WITH BAKELITE CAPS



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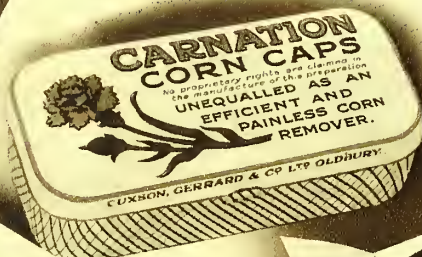
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Costs 5/- per doz.

Retails at 9d. each.

Bonus of 1 dozen with orders of 1 gross.

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We also make "Thermoid" Anodyne Plaster. Strongly recommended as a remedy for Bronchitis, etc. Attractively packed and retailing at 1/- each (6/6 per dozen).

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*Attractive Show Material and samples on request.
Buy direct from the actual manufacturers and
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The complete Handy Pliable Surgical Dressing prepared for ready application for all minor injuries. It consists of medicated Dressing superimposed on Antiseptic Self-adhesive Plaster, readily conforms to the injury and remains firmly in position.

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YEAST *for medical use* *in tablet form*

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This preparation is recommended for the treatment of all skin eruptions, and also for improving the condition of the blood.

Should retailers experience any difficulties in getting supplies through usual channels send a postcard to the manufacturers.



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RARE EFFICACY**

An ethical pharmaceutical product for which a continuous propaganda is being conducted with the Medical Profession.

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Bottles of 2½ fl. oz.	1/6	13/6	per doz.
" " 6 fl. oz.	3/-	27/-	" "
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Stocks are held by the leading Wholesale Houses

*Your co-operation in promptly obtaining
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A remarkable antiseptic
DEADLY to GERMS... yet
NON-POISONOUS

The properties of 'DETTOL' permit its use at effective strengths (for dilutions see directions) and it thus possesses marked superiority over carbolic and cresylic antiseptics. 'DETTOL' is non-poisonous, non-staining, and has an agreeable odour. It is three times more efficient than phenol, or half as strong again as B.P. solutions of cresols with soap. 'Dettol'... most attractive in appearance and packing... sells at a reasonable price... 4 ozs. for 1/-, 16 ozs. for 3/- and larger sizes for medical and hospital use.



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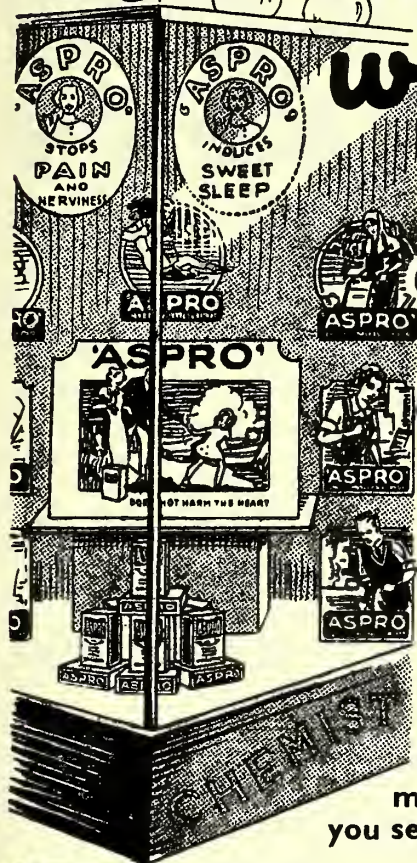
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2/6 per 1,000
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Cash with order



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Half gross of either size is the minimum order
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These Cachets are especially adapted for Headache, Neuralgia and other powders.

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Yeast specially prepared for medicinal purposes
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We specialize in the manufacture of all kinds and shall welcome enquiries.

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An exceedingly active fluid pepsine. Dose, one or two teaspoonfuls with meals. In 4, 8 and 16 oz. bottles.

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Half a powder will peptonise a pint of milk, gruel, beef tea, etc., in a few minutes. In boxes of 6 and 12 powders.

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Nutritive delicacies for Invalids. In glass jars.

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Containing all the active principles of the fresh pancreas. Used to prepare peptonised or partially digested milk and other articles of food.

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An active and natural desiccated stomach product, preferable in all respects to Liver Extracts. Supplied in tins of two sizes No. 1 and No. 2.

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The highest quality sweet essence, which can be safely used for obtaining whey for professional use in Infant and Invalid Feeding. Makes excellent Junket. In bottles of various sizes.

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Contain the purified digestive principles of the fresh Pancreas, and are coated with Keratin to protect them from the solvent action of the gastric juice, until they reach the duodenum, where they will rapidly dissolve. In bottles.

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An agent capable of affording valuable aid in the treatment of Anæmia, and also of Oligæmia due to loss of blood.

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NEW PRODUCT

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In tins at 1/9 each.

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The Active Medicaments in Dō-Dō Asthma Tablets have NOT been reduced either in QUALITY or QUANTITY★

The Dō-Dō FORMULA

Ephedrine Hydrochloride	10%
Trimethyl Xanthine	15%
Ext. Grindella Cam-	10%
Acetylmethylmethyloxyphenylhy-	20%
drazine	35%
Theobromine Sodium Salicylate	10%
Amylum	

You are thoroughly competent to judge the merit of the Dō-Dō formula, published above and printed on every packet. Dō-Dō earns the benefit of your recommendation by conforming to the highest standards of pharmaceutical excellence and therapeutical efficacy. Retail prices 1/- and 3/-.

Dō-Dō's claims to pre-eminence in the Asthma Tablet field are firm-based on the following FACTS :

1. The amount of active, curative medicament in Dō-Dō Asthma Tablets has NOT been reduced.
2. Dō-Dō Tablets are full 5-grains in size, pure medicament, free from "bulking" excipient.
3. Dō-Dō Tablets are sold exclusively through qualified chemists.
4. The formula is published on every packet (see alongside).
5. The only change made in the Dō-Dō formula since their introduction is the omission (as from May 1st) of Amidopyrine (pyramidon). For this has been substituted a remarkable new chemical substance which has all the therapeutical virtues of amidopyrine, but without its disadvantages. Dō-Dō Tablets exclusively contain this new substance.
6. The therapeutical efficiency of Dō-Dō Tablets is absolutely unimpaired, and ONE Tablet is still an effective dose. (This is most important.)

INTERNATIONAL LABORATORIES LTD., 30 - 42 Smedley Street, London, S.W.8

★ You can therefore continue to recommend
Dō-Dō Asthma Tablets with every confidence

Dr. J. Collis Browne's Chlorodyne
and
The Pharmacy and Poisons Act, 1933

Conditions of Sale
—: UNAFFECTED :—

Dr. J. Collis Browne's
CHLORODYNE

SALE RESTRICTED TO REGISTERED CHEMISTS

Sole Proprietors: J. T. DAVENPORT Ltd., Union St., London, S.E.1

DOLS' VOLATALISE FLANNEL

—means all-the-year-round customers for you . . .

The comfort it gives ensures regular orders throughout the year.

It is indicated in cases of:—

RHEUMATISM • NEURITIS
SCIATICA • LUMBAGO

Etc.

★ Your customers will appreciate your recommendation.
Ask us for literature, measurement forms, etc.

DOLS' VOLATALISE FLANNEL LIMITED
VIADUCT STREET • HUDDERSFIELD

DOLS' VOLATALISE FLANNEL SOX

Retail at 1/- per pair. Steadily increasing sales year by year are an indication of their worth. They are packed in neat display outers, and command a ready sale. Customers come again and again for these Sox. Why not order a trial supply?

**"A deep impression over the
British Isles" is being made by**

Simpkin's
SORE THROAT TABLETS

These palatable Prophylactic Tablets
are being advertised in all the leading
papers for Summer sore throats

Showcards also available

Retail Price, 3d. per oz. 2 ozs. 5½d.

An attractive, efficacious and profitable line
that sells quickly wherever shown.

Simpkin's of SHEFFIELD

The pioneers of Chemists' Confections, are
True Chemists' Friends.

Distribution is restricted entirely to the qualified Chemist

A. L. SIMPKIN & CO. LTD.

Barley Sugar Works, Sheffield, 6

★ facts for consideration

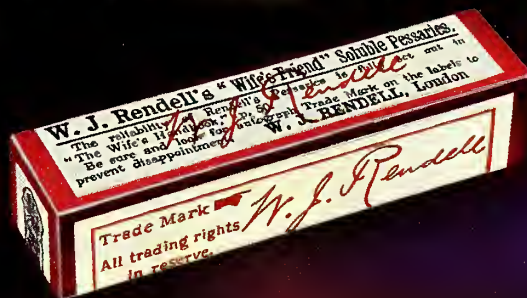
★ THE PRESCRIPTION INDICATED
BY DOCTORS WHEN IMMEDIATE
OR FURTHER PREGNANCY IS
UNDESIRABLE

★ USED IN ALL PARTS OF THE
WORLD FOR 50 YEARS

★ THE STANDARD CONTRACEPTIVE
USED BY ALL WHO RECOGNIZE
CONSCIENTIOUS
PARENTHOOD

Rendells

REGULAR CUSTOMERS
APPRECIATE A DIGNIFIED
RENDELL DISPLAY
IT INSPIRES
CONFIDENCE



ADVERTISING RESERVED
FOR CHEMISTS ENABLES
YOU TO INCREASE
YOUR
SALES

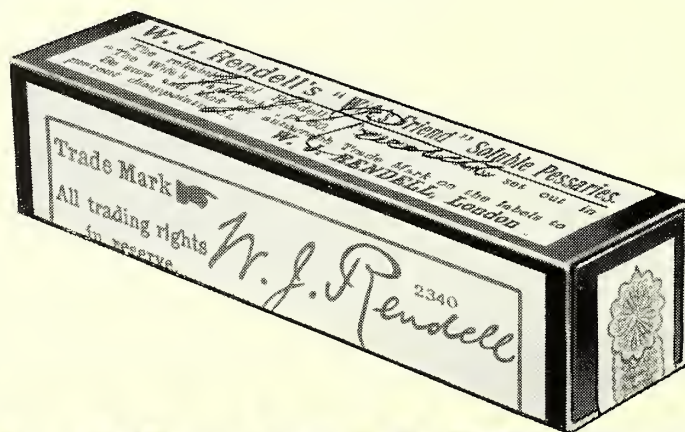
W-J-RENDELL LTD., HARDWICK HOUSE 161/5 ROSEBERY AVENUE LONDON.E.C.1

Centres of Confidence



The world over, the integrity of the British system of government is unquestioned.

Similarly, the reliability of the Chemist who stocks and displays RENDELLS is taken for granted by the general public, who are well aware of the unfailing efficacy of this scientific contraceptive.



WJ·RENDELL LTD 161-165 ROSEBERY AVENUE. LONDON·E·C·1

Killgerm

Disinfectants

FLUIDS .. POWDERS .. SOAPS
FLOOR POLISH .. TOILET ROLLS
INSECTICIDE .. FUMIGATORS .. LYSOL

Prices on Application.

THE KILLGERM COMPANY LTD.
CLECKHEATON, YORKS.

CHEMISTS AND DRUGGISTS

are generally agreed that it is the quality merchandise that produces the turnover, the profits and the satisfied customers.

Antiphlogistine Brand Dressing is a good example of a quality product. Backed by ethical advertising, secure in the goodwill of the physician, it assures a steady profit to the pharmacist.

FEATURE IT—IT IS A GOOD TRADE BUILDER

ANTIPHLOGISTINE

BRAND DRESSING

INFLAMMATION'S ANTIDOTE

for

SPRAINS
BURNS AND SCALDS
EXTERNAL POISONING
SWOLLEN GLANDS

STRAINS
WOUNDS
BOILS
BITES

Write for special quantity terms.

THE DENVER CHEMICAL MFG. CO.,

12 CARLISLE ROAD, THE HYDE, LONDON, N.W.9

TELEPHONE : COLINDALE 6701



RESTORATIVE TONICS WORTHY OF RECOMMENDATION

EGG-NOG

THE SUPREME WINE & EGG RESTORATIVE

This is a new—and different—tonic wine highly recommended by the medical profession. Scientifically prepared from matured wine, fresh eggs, etc. This line may be sold by all licensed Chemists.

"SUNRAY"

(VIN FERRI CIT)

TONIC BLOOD WINE.

Invigorating—sustaining—body building. A splendid new iron tonic, highly recommended in cases of Anæmia, Debility, and for all convalescences. A pleasing and easy way of assimilating the valuable properties of iron. **THIS TONIC CAN BE SOLD BY ALL CHEMISTS**
—LICENSED OR UNLICENSED.



Write for free samples and full particulars to:—

LAMB & WATT, LTD.,
LIVERPOOL, 3.

SCOTLAND—J. C. RENNIE & CO.,
208, BOTHWELL STREET, GLASGOW.

DON'T MISS SALES—
be sure and stock
"BARLOVA"

The nourishing food-beverage "BARLOVA" is a delicious beverage prepared from the best Malt—Milk and Eggs

Retails in three sizes:—
Price 6d., 1/3 and 3/6

Your wholesaler stocks, include a trial dozen with your next order, or write us to-day for trade samples.
Ample advertising, printed literature and window display material available.

NOBBY'S PRODUCTS Ltd.
HYDE, CHESHIRE
Phone: Hyde 329

BARLOVA
FOOD DRINK OF HEALTH

MEET THE CONSTANTLY
INCREASING DEMAND FOR

PURE BEER

ALE OR STOUT
EASILY MADE AT HOME



FOR **1 D** PER PINT FROM

VIGGORMALT
(REGD.)

IMPROVED AND PERFECTED

PURE TRIPLE-STRENGTH EXTRACT OF

RICH MALT and CHOICE HOPS

Free Yeast Packed with each Tin • Your Customer Simply Adds Cold Water

FIRST SIZE	1/-	PER TIN	:	3 times quantity	2/6	PER TIN	
				8 "			5/6
				13 "			8/-

Write for Show Material and Liberal Terms to the
Distributors: — **FASSETT & JOHNSON, LTD.,**
86, Clerkenwell Road, London, E.C.1.

Sole Manufacturers—**VIGGORMALT LTD., Hove, Sussex**

GREAT ADVANTAGE...

accrues to you from the persistent and sustained propaganda on behalf of

-Iglodine-

The all-British safe and reliable anti-septic and pure drug—Tri-Iodo-Ethyl-Phenyl—

There is a steady demand from Commercial Welfare Departments of Industrial Concerns, workshops and homes, which ensures a regular turnover for you. Iglodine products have a solid reputation—do their job most effectively and are worthy of display and recommendation.

They give satisfaction to users and incidentally show you a profit of 50%. They are good stock always and can be obtained direct or from your usual wholesaler.

**"IGLODINE"
Specialities**
(On the P.A.T.A.)

ANTISEPTIC
EMBROCATION
TOILET SOAP
OINTMENT
PASTILLES
THROAT TABLETS
CREAM
SHAVING STICK
NASAL DOUCHE
SUPPOSITORIES
SALICYLATED and
FIRST AID OUTFITS
"IGLO"
VETERINARY
PREPARATIONS

Showcards and advertising literature gladly sent on request. Write us to-day for details of Special Window display offer.

The Iglodine Co.

LIMITED

PILGRIM STREET
NEWCASTLE-ON-TYNE

Phone: Newcastle-on-Tyne 22744
Grams: IGLODINE, Newcastle-on-Tyne

Increase your turnover....

by keeping
well stocked with

PHOSFERINE

BRAND TONIC

The Greatest of all Tonics



This popular Tonic Medicine is always in demand and is supported by intensive National Advertising.

LIQUID and TABLETS

1/3, 3/- and 5/-

CARRIAGE PAID.

MONTHLY A/C

*Window display terms in United Kingdom
on application to:—*

PHOSFERINE (ASHTON & PARSONS) LTD.
La Belle Sauvage, Ludgate Hill,
LONDON, E.C.4

*In the
preparation of
fine chemicals*



- There is a grade of "Silver Fox" Stainless Steel to meet any mechanical conditions and to give the highest resistance to chemical attack.

"Silver Fox" No. 20 is the standard grade for chemical plant; No. 22 is resistant to weld decay; No. 24 to attack by sulphuric and other acids, and is also free from weld decay.

Write for Leaflets SF. 157/23/23a giving particulars of the resistance to attack by various reagents.

"SILVER FOX"

NEW PROCESS

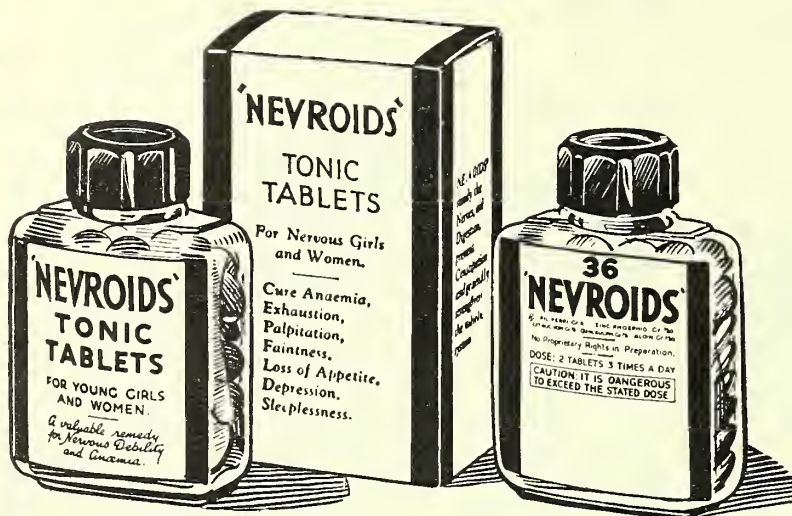
STAINLESS STEEL



SAMUEL FOX & CO. LIMITED
STOCKSBRIDGE, NR. SHEFFIELD

Associated with The United Steel Companies Limited

NEVROIDS



Many Chemists say they are the finest line they have had for years.

THE
ACTON PILL & TABLET CO. LTD., ASH VALE, SURREY

"NEVROIDS"

is now our registered Trade Mark, and we are having a very big demand for these Tablets, which shows that there is a big field for a product of this nature. They are a 1/3 line that shows 50% profit, and can only be SOLD BY CHEMISTS.

We print name on 1 dozen.

We should be glad to hear that we can send you as free sample 1/4 doz. in attractive Counterbox, with Show Card and Counter bills—just to show you how well they sell.



The famous "Town Talk" Liquid Silver Polish, Silver Plate Cloth, Liquid Pewter Polish, Chromium Plate Cloth, and Cut Glass Cloth, afford you five ways to a woman's purse. They are consistently advertised in women's newspapers and journals, and their qualities make them quick-selling, repeat-order lines.

Push the "Town Talk" 5, they yield a good profit and bring customers into your shop.

ORDER DIRECT OR FROM

MANCHESTER:
James Woolley Sons &
Co., Ltd.
LEEDS:
Goodall, Backhouse & Co.
LEICESTER:
E. H. Butler & Son.

LONDON:
Brooks & Warburton, Ltd.
May, Roberts & Co., Ltd.
LIVERPOOL:
Ayrton, Saunders & Co.
Ltd.

THE TOWN TALK POLISH CO., MANCHESTER, 10

TAMARINDS

NEW CROPS

BARBADOS, ANTIGUA, CALCUTTA

Our first shipments have now arrived.
Let us quote you.

BRUCE, STARKE & Co., Ltd.
16 Water Lane, London, E.C.3

Grams: STARKEMAD, LONDON

Phone: ROYAL 4337



POPULAR HOME REMEDIES

DAISY POWDERS



Probably the most profitable of all nationally advertised proprietary medicines. To push Daisy means satisfied customers and substantial profits.

7½d. size (4 Powders) 5/- doz.

10½d. size (6 Powders) 7/6 „

*Boxes of 72 Powders 6/10 each

*Display Cards (20 Powders) 2/- each

*New packing—powders in individual envelopes for split bulk sales (43% Profit)

Always keep "DAISY" on display.

DAISY TABLETS



1/3 Size

Per doz. 10/-

6d. Size

Display Racks (1 doz.)

@ 4/- each.

(Split dozens @ 4/6 doz.)

3d. Size

Display Cartons (1 doz.)

@ 2/- each.

(Split dozens @ 2/3 doz.)

All metal display rack, contains 1 doz. 6d. tubes.

The most effective and conveniently packed medicine of its kind.

DAISY COUGH SYRUP



An elegant and unusually effective Syrup. Well packed, popularly priced. Order Daisy Cough Syrup with your Daisy Powders.

1/3 size at 10/- doz.

6d. size at 4/- „

Best of all proprietary cough remedies. Good value to your customer yet shows decent profits.

A line worth pushing.

DAISYLAX

SEVENFOLD VEGETABLE EXTRACT



LAXATIVES

1/3 Size

Display Cases (1 doz.)

@ 10/- each.

(Split Cases @ 10/6 doz.)

6d. Size

Display Cases (1 doz.)

@ 3/11 each

(Split Cases @ 4/3 doz.)

TRIAL SIZE 2d.

Display Cases (3 doz.)

@ 3/11 each.

(Split Cases @ 1/5 doz.)

Handsome Display Cartons in Red, Black and Gold.

Contains seven vegetable extracts—Dandelion, Rhubarb, Licorice, Cascara Sagrada, Gentian, Aloin, Gingerin.

From all Wholesalers or direct to:

J. E. ELLIS, LTD., HORSFORTH, LEEDS

OVER 100 YEARS' EXPERIENCE



SUTTLEY & SILVERLOCK

LTD.

CHEMISTS' and GENERAL
PRINTERS

ANDOVER, HANTS

are able to place at your service the accumulated experience of over 100 years' specialised printing for chemists, a record which no other firm can approach, a service no other firm can offer.

To the Old Established Chemist

We offer designs of dignity and restraint, thus maintaining the prestige of years.

To the Newly Established Chemist

We offer designs which, without being blatant or extreme, are "up to the minute" in originality and freshness.

AVAIL YOURSELF OF OUR EXPERIENCE

Our staff will be pleased to suggest and advise without any obligation on your part. Your enquiries will be appreciated and welcomed

FOR

LABELS, BAGS
ENVELOPES
CARTONS
SKILLETS

BILLHEADS
POSTCARDS
SHOWCARDS
WINDOW BILLS

CALENDARS
TOILET ROLLS
D.D.A. REGISTERS
WRAPPING PAPERS

PRESCRIPTION BOOKS
PRESCRIPTION ENVELOPES
ADVERTISING BLOTTERS
COUNTER WRAPPERS, ETC.

POISON REGISTERS AND CERTIFICATES

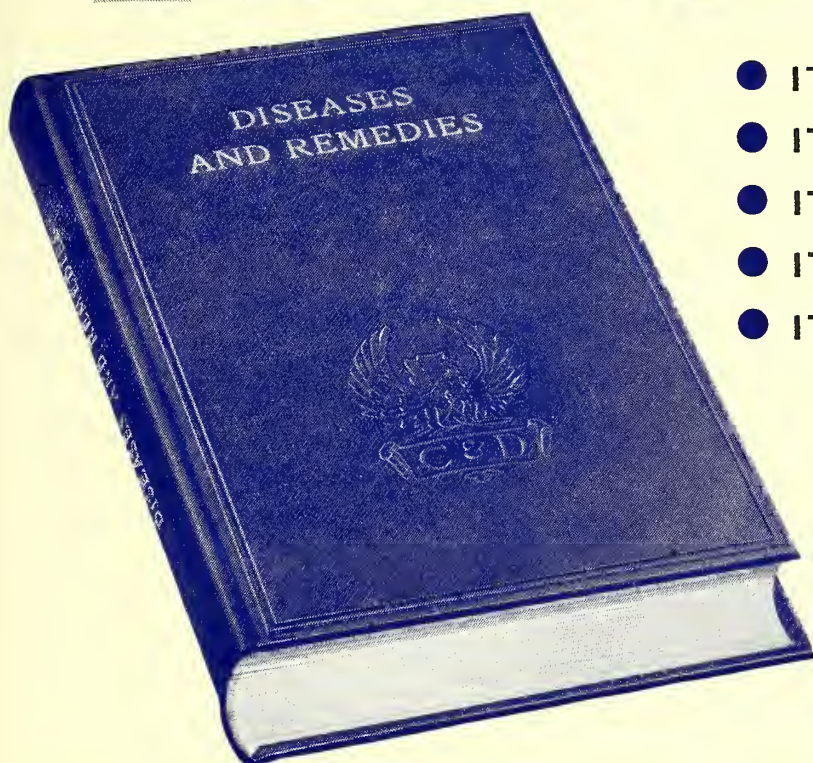
Write to—

SUTTLEY & SILVERLOCK LTD.

Chemists' and General Printers

ANDOVER, HANTS

New 1936 EDITION



- IT'S REVISED
- IT'S LARGER
- IT'S UP TO DATE
- IT'S CONCISE
- IT'S ONLY 7/6

7/10 post free

The chemist's complete
guide to medicine as
practised today

Revised and brought up to date, "Diseases and Remedies" provides a host of formulas which are in accordance with foremost medical opinion. Reference is made easy and rapid by the alphabetical arrangement of diseases. Remedies and treatments are thus promptly found.

The age-old right of chemists to "counter-prescribe" is preserved to them under Section 19 (1) (c) of the Pharmacy and Poisons Act, 1933. "Diseases and Remedies" is invaluable in this connexion. It is equally indispensable to the chemist who wishes to keep abreast of modern tendencies and opinion in medicine.

This Book is quite unique and provides in handy form just the information you require. Supplies will be ready in July and orders will be executed in strict rotation.

★ There is bound to be a heavy demand. Make sure of your copy by filling in the order form below.

To THE PUBLISHER,
THE CHEMIST AND DRUGGIST,
28 Essex Street, Strand, London, W.C.2

Please send to me when published a copy of
"DISEASES AND REMEDIES"
for which I enclose remittance value 7/10.

ORDER

Date.....

Name.....
Address.....
.....
.....

Affix
Slip Label
here

THE CHEMIST & DRUGGIST

28 ESSEX STREET, STRAND, LONDON, W.C.2

FOR many years we have specialised in every class of printing for Drug Trade requirements, Labels, Cartons, Folders, Prescription Envelopes, Counter Bills, Wrappers, etc., etc. Our prices are distinctly interesting—delivery is prompt and always on time. Send us your next enquiry, and realise what “really good printing” means.



the mark of enterprise in printing



Send for samples of attractive printed matter that will definitely improve your sales.

Use more printed matter if you would sell more goods!

ALF HARRISON & SONS

CHEMISTS' AND ADVERTISING PRINTERS
BURLEY ROAD, LEEDS, 4. London Office: SENTINEL HOUSE, SOUTHAMPTON ROW, W.C.1

'PHONE: HEADINGLY 51974.

'GRAMS: "IDEAS," LEEDS.

LONDON OFFICE: 'PHONE: HOLBORN 9200

PURITY**ACCURACY**

RED BRAND
DIAMOND

RED DIAMOND**RED DIAMOND**

Under this mark we offer a comprehensive range of Chemicals, Pharmaceuticals and Counter Requisites. Manufactured and processed under the supervision of highly skilled chemists, they have been tried, tested and *not* found wanting by stockists all over the country.

Without altering the essentials of style or design, as new and improved containers come on the market, fresh styles in printing become established, they are incorporated in the packaging.

Thus for therapeutic excellence and excellence of presentation, every Red Diamond branded article handed over the counter worthily upholds the highest traditions of pharmacy.

New brands come on the market daily, live for a day and their day is done. The Red Diamond brand continues and thereby commands the interest and attention of the thinking pharmacist who above all other members of the trading community, recognises and appreciates the value of reliability.

Illustrated Price List on Application

FOR TESTED DRUGS

BURGOYNE
BURBIDGES & CO. LTD.
LONDON E.
Manufacturers of Pharmaceuticals since 1741

AND CHEMICALS

NUROFILM

*Sensitive as Sight
British as the Flag*

Nuro Film is fast—27° Scheiner. Fully orthochromatic with exceptional colour corrective powers. The balanced emulsion produces a fine grain which gives a realistic rendering of delicate tones, and the essential crispness of detail.



**Dull or bright-exposures right with-
LASTIC LATITUDE**

The New Feature that will Revolutionise Film Sales

The "Lastic Latitude" in NURO balanced emulsion ensures the scientifically correct negative density that produces the crisp brilliant picture—a feature that has a strong appeal both to the amateur and the serious worker. Sell NURO FILM to your customers with the confidence that it will add to your goodwill.

A NEW POPULAR SIZE · 4 EXPOSURE SPOOL SELLING AT 6d.

In addition to the standard sizes NURO introduce a new 4 exposure spool to retail at sixpence. Progressive dealers will be quick to realise, and equally quick to take advantage of this popular priced spool—the only quality film made in a sixpenny size, and particularly suitable for users of the popular miniature camera.

ALSO MADE IN ALL STANDARD SIZES

NURO (Biggleswade) LTD.
BIGGLESWADE · BEDS · ENGLAND

Tel.: Biggleswade 234

'Grams: "Nuro" Biggleswade

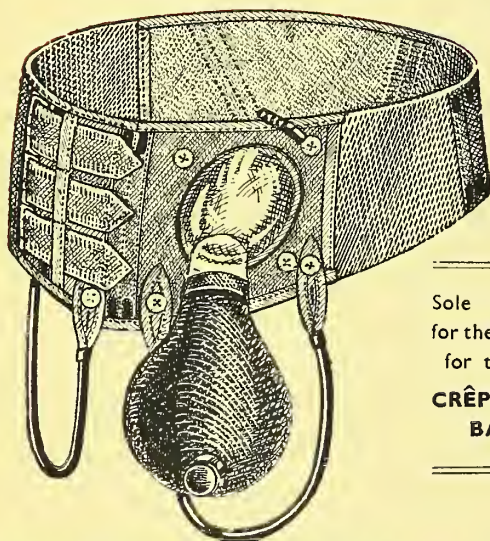
HEWARDS

OF TWICKENHAM FOR

SURGICAL

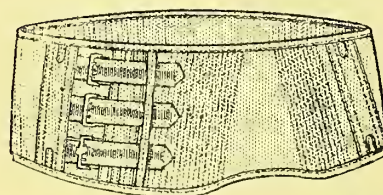
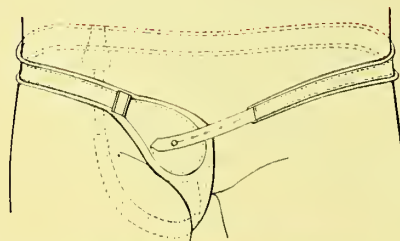
APPLIANCES

OF QUALITY *Made in London of
British Materials & Labour*



Sole concessionaires
for the British Empire
for the renowned

**CRÊPE VELPEAU
BANDAGES**



**ABDOMINAL & SUPPORTING BELTS • SPRING & ELASTIC TRUSSES
ELASTIC HOSIERY • SUSPENSORY BANDAGES • ELASTIC BANDAGES
& ALL KINDS OF APPLIANCES**

Special Orders for Trusses, Abdominal Belts, etc., despatched same day as received. Write for Catalogue to

THE R. H. HEWARD CO. CROWN ROAD WORKS, TWICKENHAM, MIDDX.

THE GREATEST SUCCESS OF THE YEAR

Evening in Paris COLOGNE

THE NEW COLOGNE
WITH AN EXQUISITE
PERFUME

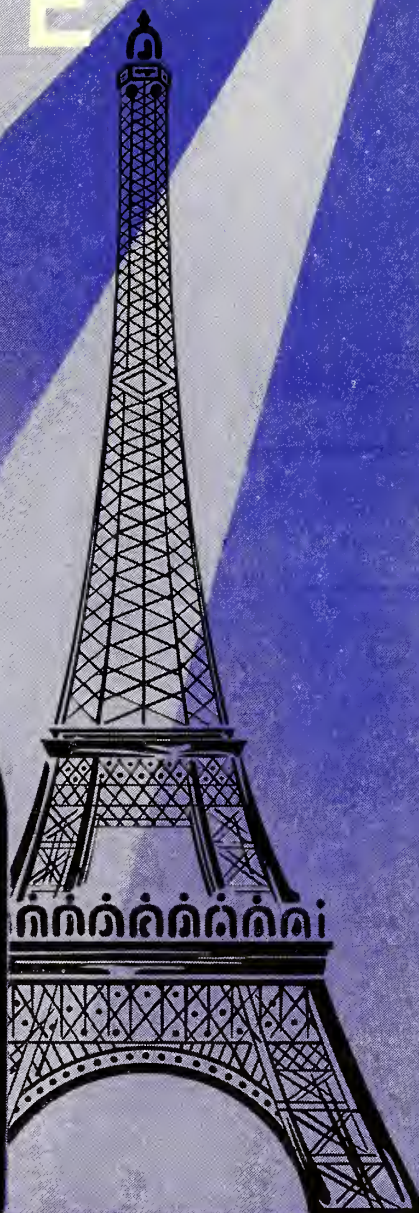
The success of "Evening in Paris" Eau de Cologne has been phenomenal. Women have welcomed it enthusiastically as the leader in its field for price and quality. And now that hot weather is here "Evening in Paris" Eau de Cologne is in still greater demand for its refreshing and cooling properties.

Your profits will prove that it is wise to stock and display "Evening in Paris" Cologne.

Prices:

1/6, 2/6, 5/-, 7/6, 12/6 & 21/-

The illustration shows the 1/6 bottle, actual size.



BOURJOIS

You recommend
EUCRYL!
I'll try it.

EUCRYL

DENTIFRICES

TOOTH POWDER · TOOTH PASTE · DENTURE POWDER

Bought on Display Terms yield:-

PROFIT ON
SELLING
PRICE

43%

PROFIT ON
BUYING
PRICE

75%

EUCRYL LTD. Manufacturing Chemists, **SOUTHAMPTON**

*The All-British
Dentifrices
with BIG
PROFITS*

**Nationally
Advertised
all the
Year Round**

SUPERFINE

TOILET CREAMS

AND

OINTMENTS

OF SUPREME DISTINCTION ARE

SPUN

REGISTERED TRADE MARK

**ELEGANT AND DISTINCTIVE PACKS
OF ALL PHARMACEUTICAL PREPARATIONS**

PHONE FOR QUOTATIONS

TELEPHONES { HOP 2422
HOP 2423
HOP 2424
HOP 1013

TELEGRAMS: USHENSUNA, LONDON

ROBERT BLACKIE,
TOWER BRIDGE ROAD,
LONDON, S.E.1

COLD CREAMS
PURE TURTLE OIL
VANISHING CREAM
MASSAGE CREAM
ROUGE PASTES
FOUNDATION CREAMS
CLEANSING CREAMS
HAND CREAMS,
ETC., ETC.

• — •

UNG. ZINCI. B.P.
UNG. SULPH. B.P.
UNG. CARBOLIC CO.,
ETC., ETC.

BOB MARTIN ADVERTISING now forges ahead

BE READY FOR THE PEAK SALE PERIOD

Next week, the new Bob Martin Advertising enters on the big drive for the summer season! Larger spaces, more frequent insertions, an extended list of Provincial papers as well as National dailies and periodicals, and striking posters on the London buses—all will hammer home to dog-owners the particular need for Bob Martin's in summer weather. Week by week, these prominent and compelling advertisements will be creating more business for you. Now is the time to profit from Bob Martin's peak sale period! Keep your Bob Martin displays on show: let them catch the public eye: share in the growing success of the new Bob Martin Advertising.

(1) Opposite is one of a series of full-page advertisements (shown in reduced size) which will appear in the 'Radio Times' every week during July. In the National dailies and the illustrated newspapers these spaces will be increased in size so that they dominate the whole of the page on which they appear. In leading Provincial newspapers and an extended list of periodicals prominent positions have also been reserved. Every dog-owner in the land will be reached by Bob Martin Advertising. (2) In London and the Suburbs, press advertising will be reinforced by these striking bus-sides printed in bright colours.



'dog was just a lump of lassitude'

Mr. S. V. CRUSSELL and Nancy at their home in Plaston

Mr. Crussell had his hands full with his St. Bernard, Nancy. The first touch of summer heat always upset Nancy and left her limp and listless. Then Mr. Crussell decided to treat her with Bob Martin's. Nancy improved amazingly, and says Mr. Crussell, "It's a marvel how a little Bob Martin's could cure such a big dog so quickly."

Why Nancy was listless



When a dog is listless it is a sure sign that his blood is loaded with impurities. He cannot rid himself of these impurities by perspiring because, as the diagram shows, a dog's skin (B) is non-porous, whereas in human skin (A) there are ducts through which perspiration passes to the surface. Also, your dog is denied the natural correctives found in certain wild grasses and herbage, for these are now beyond his reach. That is why you must help him to keep his blood pure — by providing him regularly with the natural blood correctives in Bob Martin's Condition Powders.

HOW TO KEEP YOUR DOG FIT

your dog is listless, continually scratching or off his food, Bob Martin's Condition Powders will quickly restore him to perfect health. By removing every impurity from the blood, these famous powders cure all blood disorders — listlessness, loss of appetite, scratching and eczema. And remember that you can give your dog a wonderful new fitness and prevent future illness if you just follow the method of regular conditioning initiated by Mr. Bob Martin. That is how leading breeders, trainers, and thousands of ordinary owners keep their dogs fit and free from all ailments. Begin this week — give your dog his Bob Martin's every Saturday and Sunday. Soon he will be lifted to a wonderful new level of health — and his coat will gleam with the lovely 'bloom' of a dog in perfect condition. You can get Bob Martin's in 6d. packets of 9 or 1/- boxes of 21 packets, from all chemists and dog shops.

Regular conditioning means that without fail you give your dog

Bob Martin's
3 times EVERY WEEK

MARTIN LIMITED SOUTHPORT LANC.

Bob Martin LTD.

ESTABLISHED 1892

SOUTHPORT, LANCs.

Any quantity of Dried **YEAST** by return

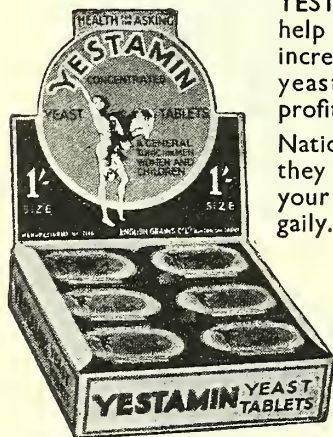


Are you sharing in the demand for dried yeast, which has grown so tremendously in recent years? The medical profession prescribes it in increasingly large quantities and the leading hospitals use a very considerable amount. To help you to meet this demand we have increased our production and supply facilities. We can supply by return any quantity of our specially prepared pure yeast, in bulk or tablet form, at extremely moderate prices.

'B' Vitamin Dried Yeast provides the ideal yeast medicament in extremely palatable and convenient form. Let us have your enquiries for prices and quantity quotations for all Yeast products.

We can supply many kinds of Tablets in Bulk.

YESTAMIN Tablets



YESTAMIN TABLETS will help YOU to meet the increasing demand for dried yeast in a handy and profitable form.

Nationally advertised as they are, they will make your cash register ring gaily. Also in Powder form.

YESTAMIN
is the best
natural source
of Vitamin B.

Prices as follows:

Tablets 6d. size	4/- per Dozen	Powder 1/3 size	10/- per dozen
" 1/- "	8/- "	" 2/- "	16/- "
" 2/- "	16/- "	" 3/6 "	28/- "

SPECIAL TERMS FOR COUNTER and WINDOW DISPLAY SENT ON REQUEST.

Sole Manufacturers:

THE YESTAMIN CO.
(THE ENGLISH GRAINS CO., LTD.)
BURTON-ON-TRENT

**HAVE YOU
GOT
YOUR
COPY?**

This list will fully repay consultation when buying Druggists' Sundries and Toilet Requisites. Keep your copy always at hand.

**UNIQUE
FREE GIFT OFFER
CLOSES END OF JULY**

BURGE, WARREN & RIDGLEY LTD.

91 & 92 Great Saffron Hill, London, E.C.1

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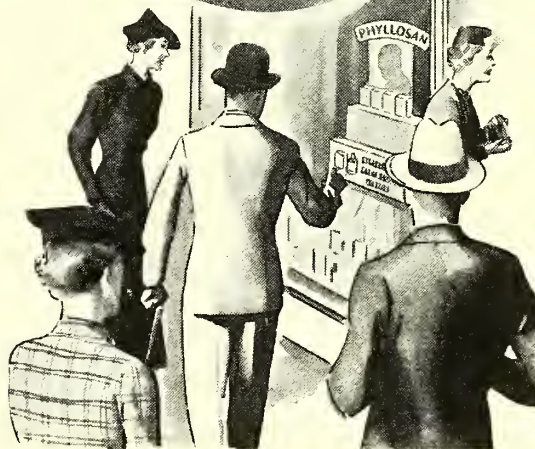
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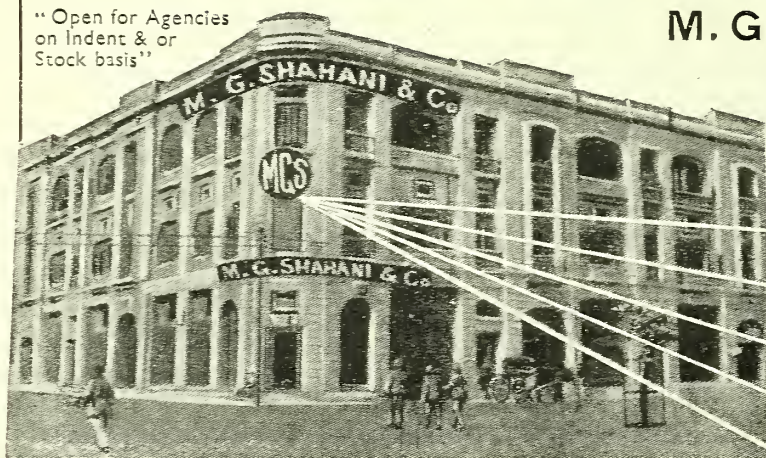
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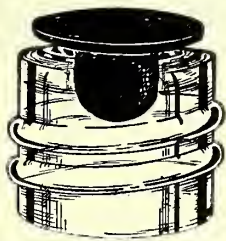
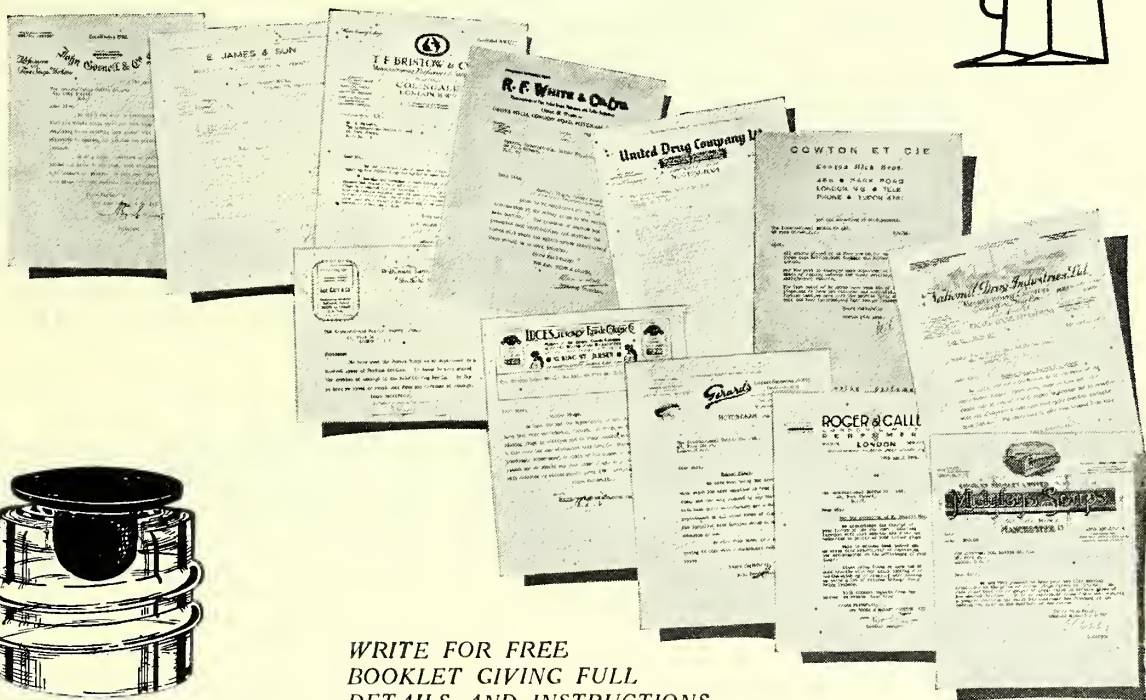
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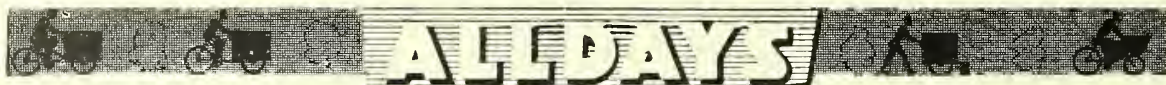
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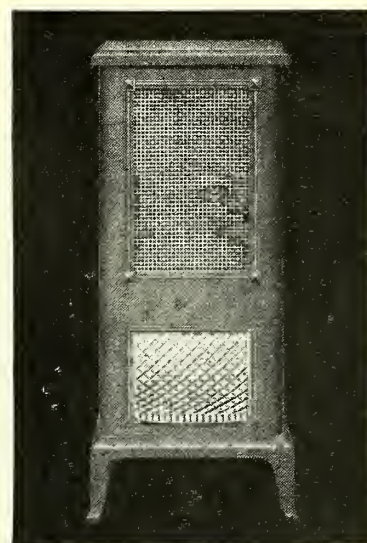
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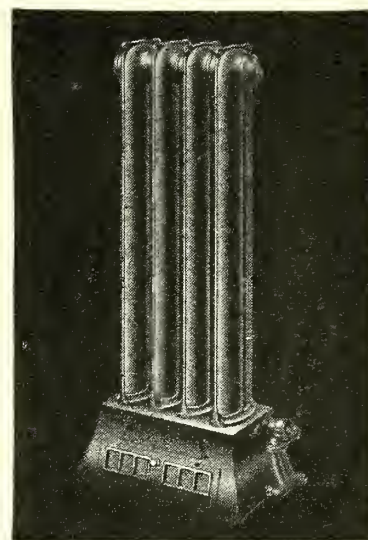
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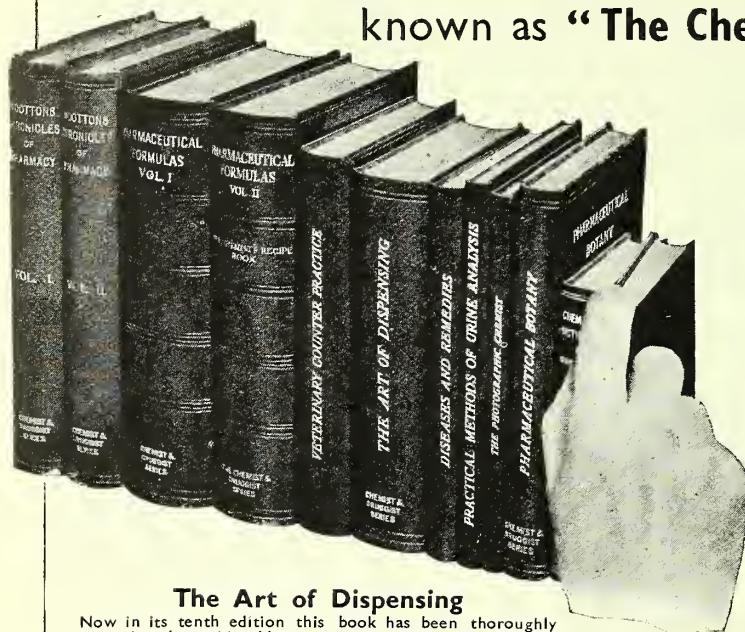
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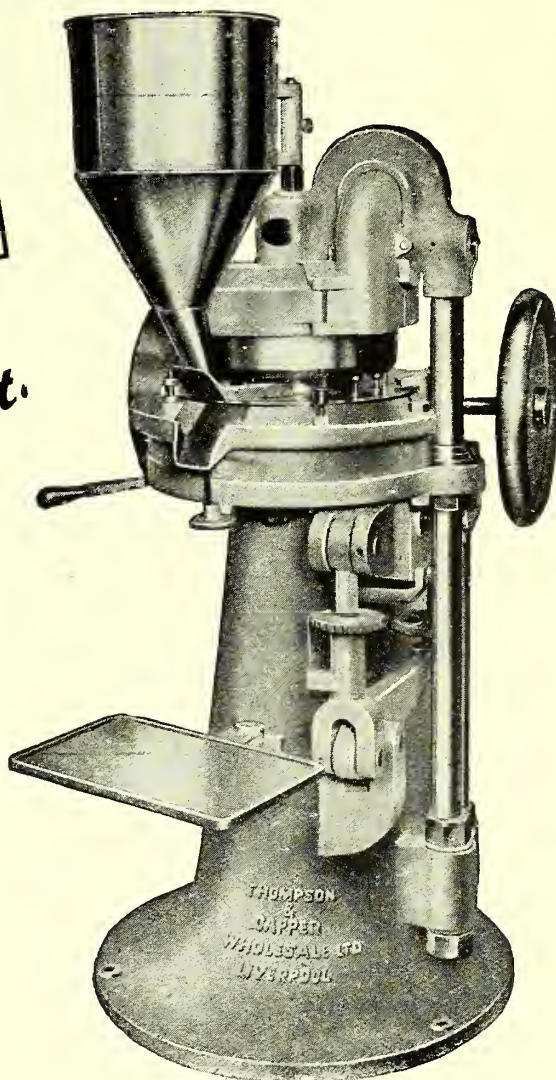
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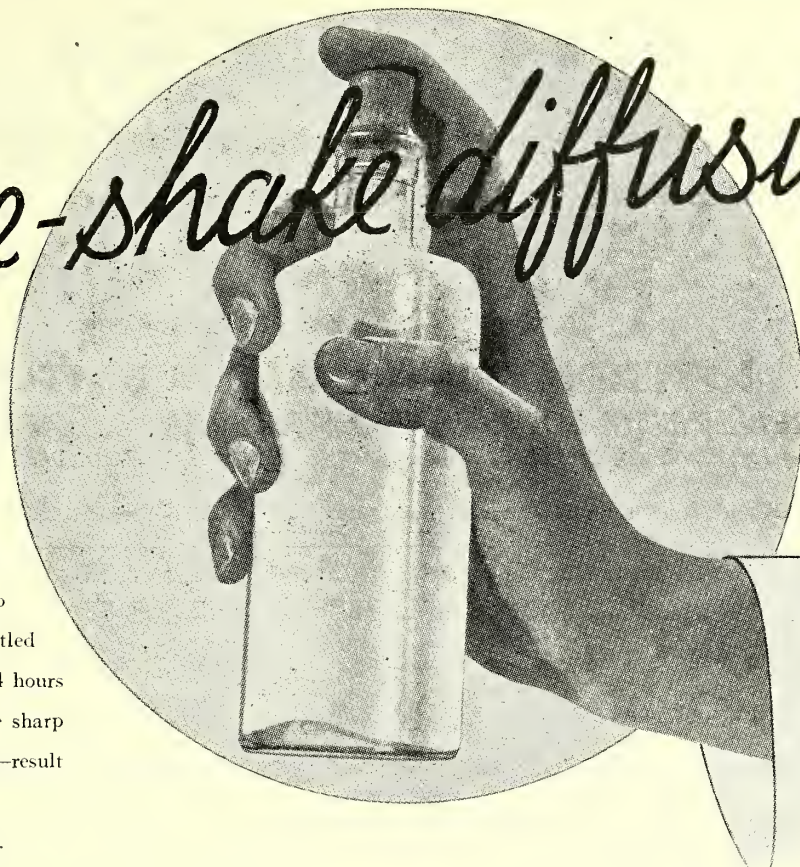
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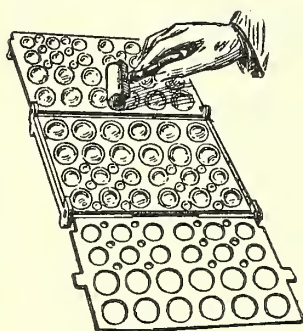
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News of the Week

Sessional Events

Members of the Portsmouth Branch of the Photographic Dealers' Association attended a lecture by Mr. J. E. Saunders on "Miniature Cameras" at the Fratton Hotel, Southsea, recently. Mr. Saunders took with him a large collection of miniature cameras. After the lecture members were invited to examine the apparatus.

The Bolton and District Chemists' Association met recently to hear a lecture on "The Pharmacist and the New Poisons Regulations" by Mr. F. W. Adams (assistant secretary of the Pharmaceutical Society). An excellent attendance of members was presided over by the president of the branch (Mr. F. Brindle, Ph.C.). Mr. Adams said that the new requirements covered all businesses into which poisons entered. The regulations did not make very great changes in pharmaceutical practice; they altered the law but only gave legal force to what had been practised in all well-regulated pharmacies. There was no reason for apprehension in the new regulations. The speaker discussed the four Schedules and explained in detail the various provisions. There had been some uncertainty about the question of knowing the purchaser, but the regulations simply translated into legal phrases what the chemist had always regarded as a moral obligation.

Outings

Members of the Birmingham Pharmaceutical Association visited Stratford-on-Avon on June 10. The party found their own way to Stratford and met for tea at the White Swan Hotel. After tea one party went for a river trip, another party was conducted over the theatre by a guide and the remainder visited the town. The event concluded with a visit to the evening performance of "Much Ado about Nothing" at the Memorial Theatre.

A party of members of the Reading and District Branch of the Pharmaceutical Society and their friends visited the Glaxo Laboratories, Greenford, on June 10. A short description of Glaxo products and processes was given in the lecture room by Mrs. Gilbert and Mr. W. S. James before a tour of the departments was made. One of the most interesting sections visited was the bacteriological department, where "dissolved" vaccines are made. These vaccines are of brilliant transparency. In the ampoule department the automatic ampoule filling machine, which fills and seals ampoules at the rate of 1,600 an hour, was a centre of interest. The optical room, the pharmaceutical laboratories, chemical laboratories, capsule room and tablet room were also visited, and the preparation and packing of glucose D was shown. Tea was provided in the works dining hall.



Sporting Events

The Leicester School of Pharmacy gained a number of awards at the sixth annual athletic sports of the Colleges of Art and Technology. For the third year in succession the pharmacy tug-of-war team won the shield, and the ladies' inter-sectional relay race was also won by a team of ladies from the department. First prizes were gained by pharmacy students as follows:—Throwing the cricket ball (a record—105 yards), J. B. Barnett; 120 yards hurdles and long jump (ladies), Miss M. N. Grudgings; 120 yards hurdles and high jump, N. B. Fleet.

The second annual golf competition of the Hull Chemists' Association for the Lofthouse cup was held at the Hull Golf Club's Course at Kirkella on June 11. A medal round re-



sulted in a win for Mr. V. H. Iddon (69), while Mr. S. T. Kirton was runner-up (72). Other leading scores were:—A. L. Spink (73), H. S. Smart (75), J. R. Stewart (77), J. J. Spilman (80), A. Surfleet (81), W. E. Naylor (82). After tea the Lofthouse cup, the president's (Mr. R. H. Watson's) salver and replicas were presented to the winners by Mrs. A. G. Surfleet.

Blackpool

In an exciting finish, Blackpool chemists defeated a team of local doctors by one run in a cricket match, on June 17, for the benefit of Blackpool Victoria Hospital. The doctors declared at 100 for eight. The chemists, after an unsteady opening, had 75 runs on the board with eight wickets down. Wright, the next batsman, treated the bowling with little respect, but with the score at 100 was bowled when going for the winning hit. It was left to Chew, the last man, to make the winning run, and immediately after he had done so, his partner, Dyson, was stumped.

Doctors		Chemists	
Longworth, b. Eccles ..	35	Sidebottom, c. b. Ferguson ..	12
Dove, b. Cooke ..	0	Shipley, b. Longworth ..	12
Harris, run out ..	5	Cooke, lbw. Overend ..	0
Overend, c. Lofthouse, b. Eccles ..	3	Lofthouse, b. Overend ..	11
Ferguson, b. Aspden ..	10	Eccles, b. Overend ..	0
Bruce, c. Eccles, b. Sidebottom ..	30	Perkins, run out ..	17
Hilliard, c. Chew, b. Cooke ..	0	Aspden, st., b. Overend ..	9
Jones, not out ..	5	Durkin, c. b. Longworth ..	5
McAuley, b. Sidebottom ..	0	Dyson, st., b. Overend ..	7
Extras ..	12	Wright, b. Overend ..	17
		Chew, not out ..	1
		Extras ..	10
Total (8 w. dec.) 100		Total 101	

Bowling:—Cooke, 2 for 10; Aspden, 1 for 9; Eccles, 2 for 8; Sidebottom, 2 for 17.

The annual meeting of the local branch of the Photographic Dealers' Association was held on June 18. Mr. W. Jones, secretary, said the manufacturers had agreed to take action with regard to illicit dealing at "observed new selling points"

but not in old cases. The question as to whether the Branch should break away from London and be independent led to a long discussion. Several members spoke in favour of the move. Against, it was pointed out that there was hardly enough action and interest among the bulk of the members to support an independent branch. Further, illegal dealing had increased in districts where the local associations had broken away. Ultimately, it was agreed to let the matter rest for the time being. The election of new officials resulted as follows: *President*, Mr. W. Ludlam (Fleetwood); *Vice-President*, Mr. J. Dyson; *Secretary and Treasurer*, Mr. W. Jones; *Auditors*, Messrs. A. R. Sidebottom and J. W. Huddart; *Executive*, Messrs. C. Corforth, J. F. Blackhurst, W. Holmes, H. Lamb, A. Barnes, J. Jeffery, and E. Gameson.

Liverpool

Preparations are well advanced in anticipation of the British Pharmaceutical Conference being held in Liverpool in 1937. Mr. W. E. Humphreys, M.P.S. (Ward & Humphreys, Ltd., chemists, Allerton Road), has accepted the secretarial duties.

As chairman of the Liverpool Chamber of Commerce, Mr. T. Edward Lescher presided at a luncheon at the Exchange Hotel, Liverpool, on June 17 in honour of Dr. Earle Page, Deputy Premier of Australia and Minister of Commerce. Mr. Lescher expressed Liverpool's willingness to help Australia to export to the consuming public of the North of England. Liverpool had all the facilities for dealing economically and with despatch with more direct shipments of their products, and was anxious to extend trade in Australian produce, and to ensure that it was marketed effectively.

Manchester

A Manchester daily paper recently published a paragraph stating that shipowners whose vessels use the Manchester Ship Canal would not—even if they could—have its water changed for the clearest of Thirlmere water. It appears that ships that lie in the canal for a month or more get rid of barnacles. The explanation given is that the sulphuretted hydrogen which bubbles up naturally from the canal bed kills off the life encrusted on the keels of the ships, and it falls off or is easily removed.

Miscellaneous

"EMPIRE HEALTH WEEKS."—The Central Council for Health Education announce the opening of a new series of "health week" campaigns in various parts of the country, supported by health exhibitions. The series opens with an exhibition at Portsmouth on September 14.

EARLY CLOSING ASSOCIATION.—The Board of Management of the Early Closing Association has elected the following officers for the ensuing year:—*President*, Mr. Winston Churchill; *Parliamentary Chairman*, Sir P. J. H. Hannon; *Chairman of the Board*, Mr. H. Owen Roberts; *Deputy-Chairman*, Councillor H. Kennett; *Finance Chairman*, Mr. Edward Gowen.

INQUEST.—At Margate, on June 23, an inquiry was held into the circumstances attending the death of Pamela S. Prince, aged a year and ten months. According to evidence the child had reached from her cot and taken a bottle of pills containing strychnine. A verdict of "Death by misadventure" was returned, the coroner adding, "It shows the danger of using pills which are sweet in their taste where there are any children."

APOTHECARIES AND LONDON UNIVERSITY.—A Court and Livery dinner of the Society of Apothecaries was held in the hall of the company. Sir William Willcox presided. In proposing the toast of "The University of London" he said they were entertaining the leading representatives of the University of London, and the Society was the first to do honour to the University during the year of their centenary celebrations. Mr. Herbert L. Eason (Vice-Chancellor), who replied, said that the growth of London University had been phenomenal. In common with the other City Guilds the Society had helped the University in the building and decoration of their Great Hall.



Irish Notes

Brevities

Joseph Keane, stated to have been a chemist and to have lived in King's Park, Glasgow, was found unconscious on Glenade Mountain, co. Leitrim, on June 4, and died in Manorhamilton Hospital.

The Pharmaceutical Society of Ireland have issued the following notice:—"Chemists in Dublin are warned against dispensing D.D.A. prescriptions for persons unknown to them. There is some reason to suspect that forged prescriptions are in circulation, and as the onus is on the chemist to see that the prescription is genuine, it behoves caution on his behalf."

Belfast

Mr. W. C. Tate, Ph.C., Royal Avenue, has been elected to the Council of the Belfast Rotary Club.

The pharmacists of Northern Ireland are represented at the Bournemouth Conference by Messrs. W. S. Taylor (president), Samuel Gibson, J.P. (vice-president), J. E. Connor, J.P., J. W. Gray, S. H. Forrest, W. Martin, W. C. Tate, Fred Storey and the secretary (Mr. D. L. Kirkpatrick). They crossed over on the evening of June 20.

Scottish Notes

Brevities

Mr. Allan Morton, chemist and druggist, Glasgow, and Mrs. Morton celebrated their silver wedding recently.

The annual meeting of members of the Pharmaceutical Society resident in Scotland was held in the Society's House, 36 York Place, Edinburgh, on June 17. The following were elected members of the Executive of the North British Branch for the ensuing year:—Harvey Phillips Arthur, Glasgow; Frederick William Moncrieff Bennett, Arbroath; William Spence Culbert, Airdrie; Archibald Currie, Leith; Peter Methven Duff, Glasgow; David Harley, Musselburgh; William Fowle Hay, Aberdeen; James Henry, Galashiels; James Innes, Leith; Thomas McKenzie, Inverness; Thomas Campbell Miller, Dunfermline; James Robertson Milne, Dundee; Alexander Murray, Glasgow; Thomas Lowrie Sinclair, Greenock; Charles Stewart, Kirkcaldy; and James Prior Todd, Glasgow. The chairman declared that these, along with the president of the Society, Mr. Thomas Marns, London, the vice-president, Mr. Edward Harry Simmons, Salford, and Messrs. Alexander Anderson Dick, Bellshill; Thomas Guthrie, Glasgow; and James Jack, Arbroath, as *ex-officio* members, would constitute the Executive for the year 1936-37.

Topical Reflections

By Xrayser

The U.S.P. Corrigena

that you published in last week's issue (p. 622) have a twofold interest. Valuable in themselves to the users of the book in this country, they also serve as a reminder of the speeding up which is going on in connexion with the revision of the British Pharmacopœia, the United States Pharmacopœia and N.F. VI. The first British Pharmacopœia occasioned so much dissatisfaction when it appeared in 1864 that a new book was compiled three years later; this, however, with certain additions sanctioned in 1874, continued in force till 1885, a period of eighteen years. The next interval was thirteen years; and the Indian and Colonial Addendum to the 1898 B.P., which was issued in 1900, was of limited scope and contained monographs intended for the revision two years earlier but not completed in time. The Pharmacopœia of 1914 (sixteen years' interval) served till 1932 (eighteen years' interval). Now, however, there is talk of a B.P. Addendum likely to be ready at the end of the present year; and the U.S.P. XI, which only came into force on June 1, is already substantially touched up. No one can say that the revision of these standard works is not prompt; it is, in fact, almost continuous.

The Chemist's Dilemma

is an expression which tersely summarises the feelings of many pharmacists towards the new Pharmacy and Poisons Act (page 701). The fact is that in many cases the attitude of the pharmacist towards the new Act has been one of "wait and see"; now that the Act has become a *fait accompli* he is bewildered. Small wonder that one hears of instances where it is seriously suggested that he would be better off without the sale of poisons. In effect he says "Let me get on with selling of goods upon which there are no restrictions and upon which I can make a reasonable profit; let the ethical pharmacist attend to the dispensing of prescriptions and the keeping of records." Already there are not wanting signs that several test cases will have to be fought before the intentions of the Poisons Board can be clarified; this is due to the extraordinary complexity of the Act. There is one aspect of the situation about which there is no doubt, that is that listed sellers are being registered at an

alarming rate! The doctor is also bewildered, although so far as my experience goes he wishes to do the right thing: the trouble is that not being used to keeping poisons records, except those of dangerous drugs, he looks upon the entering of Schedule 1 poisons and the labelling of medicines containing these with his name and address as so much unnecessary trouble; the matter is further complicated because, apparently, he has had no official guidance or instruction except from several wholesale houses who have issued booklets.

The Whole Question

of purchasing by local authorities undoubtedly required investigation and the report of the Ministry of Health upon this subject (page 702) was useful, inasmuch as some attempt was made to evolve system out of chaos. Perhaps the fairest method of tendering is that of the London County Council. Here a definite quantity of the goods is specified, to be delivered over a definite period: if a bad bargain is made by the tenderer he can give notice to withdraw the particular item without prejudice to other items for which he has tendered and obtained the contract. This is bulk buying, with split deliveries at the expense of the contractor; the system works well. The central store is another matter, the system demands a buyer or buyers and a fairly large staff to deal with the receipt and despatch of the goods. If this central store were departmentalised and the expenses of running debited to it, instead of, as I believe so often is the case, charging them up to the general wages of the authority, it would be proved, I believe, that the method may be an expense to the ratepayer rather than a saving. Incidentally and quite apart from any ethical questions of municipal trading, it is a moot question whether the method of supplying those attending welfare centres with goods from the centre rather than from the chemist is not in the long run an expense to the ratepayer when salaries, overheads, waste and other expenses are considered. The biggest argument against the system is that the work of the centre is hampered by this shopkeeping: surely the work of all those staffing the centre should be concentrated upon the care of the mother, ante-natal and post-natal, and that of the child, leaving the distribution of foods and medicines to those who exist to supply them.



Legal Reports

Libel Action Fails.—In the King's Bench Division of the High Court, London, on June 18, the Lord Chief Justice summed up, after a lengthy hearing, in the case in which Mr. Leopold E. Canon and Mr. Kenneth MacDonald, chairman and secretary and treasurer, respectively, of the National Hospital for Dentures, Hugh Street, Pimlico, S.W., sued the British Dental Association, owners and publishers of the "British Dental Journal," and John Bale, Sons & Danielsson, Ltd., Great Titchfield Street, W.1, printers, in respect of an article in that journal of May 1, 1935. The plaintiffs said that by certain words the defendants meant that they (the plaintiffs) conducted a clinic in a dishonest manner, and/or that the public were deceived by spurious appeals for funds, and/or that the funds were misapplied by dishonesty or incompetence. The defendants pleaded that the words were incapable of bearing any meaning defamatory of the plaintiffs; that in their natural and ordinary meaning they were not libellous; and that the words were true in substance and in fact, and fair comment, in good faith and without malice, on facts which were a matter of public interest. Mr. J. P. Eddy, K.C., and Mr. E. C. Morey appeared for the plaintiffs; Mr. Norman Birkett, K.C., and Mr. Valentine Holmes for the defendants. In the course of his summing up the Lord Chief Justice said that the more one considered the article in question the more one might be disposed to think that there was nothing defamatory in it, but that was a matter for the jury's good judgment and good sense. But suppose they leant to the view that there was something to be said for those who dotted the "i"s and crossed the "t"s of certain phrases in that paragraph, and sought to find in them a sinister meaning. What was then the question? It arose only if the jury answered the first question in the affirmative sense—namely, that the words were to be regarded as defamatory of the plaintiffs. The second question which then arose was whether the words were fair comment on a matter of public interest. That it was a matter of public interest no man in his senses could deny. It was necessary to see the circumstances in which the matter arose. Having reviewed the evidence, his lordship put certain questions to the jury, who, after a short absence, found that the words complained of were not defamatory of the plaintiffs. Judgment was entered for the defendants, with costs.

New Companies

P.C. means Private Company and R.O. Registered Office

CRAIGS CHEMISTS (SUTTON), LTD. (P.C.).—Capital £500. Objects: To carry on business as wholesale and retail chemists and druggists, etc. R.O.: 39 Erskine Road, Sutton, Surrey.

WILSON'S (BURGESS HILL), LTD. (P.C.).—Capital £100. Objects: To carry on the business of chemists, druggists, opticians, etc. R.O.: 187 London Road, Burgess Hill, Sussex.

COOPERS NEEDLE WORKS, LTD. (P.C.).—Capital £1,000. Objects: To acquire the business of a manufacturer of hypodermic needles carried on by Thomas J. Cooper at Hypo Works, 47 Prospect Hill, Redditch.

MANUCOL PRODUCTS, LTD. (P.C.).—Capital £3,000. Objects: To carry on the business of chemists and dealers in chemical, industrial, pharmaceutical and other preparations, etc. R.O.: Thames House, Millbank, S.W.1.

BRADFIELD CHEMICAL PRODUCTS, LTD. (P.C.).—Capital £500. Objects: To carry on the business of manufacturers of and dealers in chemicals, gases and disinfectants of all kinds, etc. Solicitors: Cartwright & Fieldhouse, Equitable Bank Chambers, Cloth Hall Street, Huddersfield.

P. A. GREENWOOD & SON, LTD. (P.C.).—Capital £1,000. Objects: To acquire the business of a chemist and druggist carried on by P. Astin Greenwood at 57 Grange Road West and 764 Borough Road, Birkenhead.

MICRON COLOURS, LTD. (P.C.).—Capital £50,000. Objects: To carry on the business of manufacturers and pulverisers of mineral, chemical and metallic colours, chemicals, etc. The first directors are not named. Solicitors: Birkbeck, Julius, Edwards & Co., 49 Moorgate, E.C.2.

OXO (UNITED STATES OF AMERICA), LTD. (P.C.).—Capital £10,000. Objects: To adopt an agreement with Oxo, Ltd., to carry on in all its various branches the business of food specialists, etc. R.O.: Thames House, Queen Street Place, E.C.4.

BROSAN & CO., LTD. (P.C.).—Registered in Dublin. Capital £500. Objects: To carry on the business of manufacturers of and wholesale and retail dealers in orthopaedic appliances, surgical belts, surgical instruments, etc. The first directors are not named.

DON. S. MOMAND, LTD. (P.C.).—Capital £4,000. Objects: To carry on the business of manufacturers of and dealers in pharmaceutical preparations, creams, etc. The first directors are to be appointed. Solicitors: McKenna & Co., 31 1/4 Basinghall Street, E.C.

CUMMING, PARSONS, LTD. (P.C.).—Capital £10,000. Objects: To acquire the business of an essence and tincture manufacturer, manufacturing chemist and distiller now carried on respectively by Alfred R. Cumming at 26/30 Stromness Street, Glasgow, as "Cumming Brothers," and by The General Kaputine Synd, Ltd., at Thornton Street, Collyhurst, Manchester, as "Parsons Essence Co."

Trade-Mark Applications

The figures in parentheses refer to the classes in which the marks are grouped. A list of classes and particulars as to registration are given in "The Chemist and Druggist Diary and Year-Book," 1936, p. 322.

(From "The Trade Marks Journal," June 3, 1936.)

"ECSTASY"; for perfumes (48). By Aziadé, Ltd., 172 Buckingham Palace Road, London, S.W.1. 568,325.

"AQUARIUS"; "CAPRICORN"; "GEMINI"; "PISCES"; "SAGITTARIUS"; "SCORPIO"; and "TAURUS"; for perfumery, etc. (48). By Palmyra Laboratories (Liverpool), Ltd., 5 Aigburth Vale, Liverpool. 568,527/530/531/534/535/536/537.

(From "The Trade Marks Journal," June 10, 1936.)

"REDMANOL"; for photographic chemicals, etc. (1). By Bakelite, Ltd., 68 Victoria Street, London, S.W.1. 566,167. (Associated.)

"AROCLOR"; for all goods containing chlorine (1). By Monsanto Chemicals, Ltd., Victoria Station House, London, S.W.1. 567,075.

"KILPINE"; for pine extract disinfectants, excluding soap (2). By Hull Chemical Works, Ltd., Kirkby Street, Kingston-upon-Hull. 566,034.

"ANTOSAC"; for agricultural chemicals, etc. (2) and medicinal chemicals (3). "AMMOKEI"; for medicinal chemicals (3). By Boots, Ltd., 37 Station Street, Nottingham. 567,007/008. (Associated.) 568,423.

"BLACK ARROW INSECT DUST" on black arrow; for insecticides (2). By W. Darlington & Sons, Ltd., The Laboratories, Southcourt Road, Worthing, Sussex. 567,803.

"RYZAMIN-B" (letter B disclaimed); for medicinal rice extract containing Vitamin B (3). By The Wellcome Foundation, Ltd., 67 Holborn Viaduct, London, E.C.1. 566,827.

"CREFTMAN"; for medicinal chemicals (3). By E. Dennis, 225 Birchfield Road, Northampton. 568,067.

Leech device, with letters "HH" ("HH" and leech device disclaimed); for medicated preparations (3). By A. M. Hogarth, 143 Golders Green Road, London, N.W.11. 567,300.

"TANROGA"; for all goods, excluding soap (3). By The Tanroga Co., Westminster Bank Buildings, 30 School Road, Sale, Cheshire. 568,042.

"TABLOSOL"; for medicinal chemicals (3). By E. Merck, Frankfurterstrasse 250, Darmstadt, Germany. 568,417.

"DEPOCAIN"; for medicinal chemicals (3). By Allen & Hanburys, Ltd., 37 Lombard Street, London, E.C.3. 568,470. (Associated.)



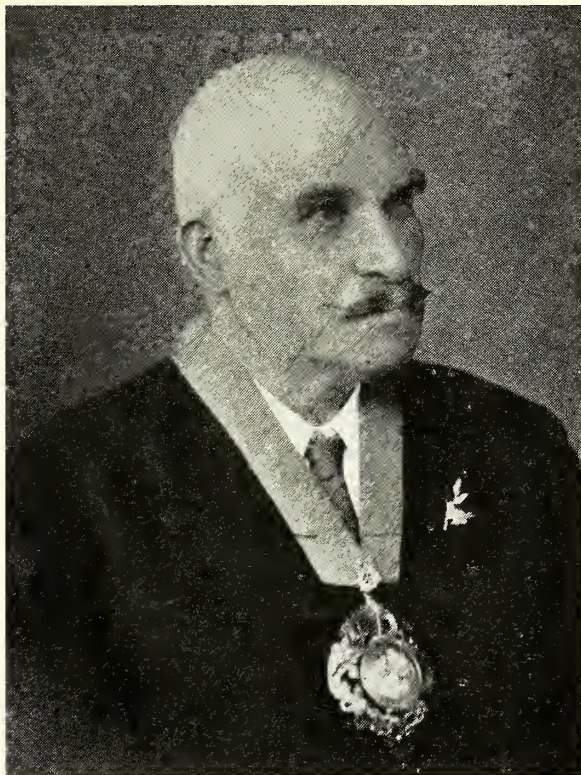
BRITISH PHARMACEUTICAL CONFERENCE

The Proceedings

BOURNEMOUTH has been host to the Conference once previously. The event happened forty-one years ago; and remembering the relatively small size of the town in 1895 we must pay a passing tribute to the enthusiasm of the local pharmacists of that period who undertook the onerous work of making the necessary arrangements. The president of the Conference on that occasion was Mr. N. H. Martin of Newcastle; the vice-presidents included (in order of seniority) Mr. Richard Reynolds, Professor Atfield, Mr. Thomas Greenish, Mr. S. R. Atkins, Mr. F. Baden Bengier, Mr. Charles Umney, Mr. William Martindale, Mr. Michael Carteighe, Mr. J. Laidlaw Ewing and Mr. William Hayes; the treasurer was Mr. John Moss; and the general secretaries were Mr. W. A. H. Naylor and Mr. F. Ransom. The Local Committee had Mr. G. E. Bridge as chairman, Mr. F. E. Bilson (this year's chairman) as treasurer, and Mr. Stewart Hardwick as secretary. The reading of the seventeen papers in the Science Section began on July 30 and ended on the following day. Among the best-known authors we may instance Mr. (now Dr.) E. J. Parry, Mr. R. A. Cripps, Mr. E. H. Farr, Mr. Robert Wright, Mr. C. E. Sage, Mr. J. C. Umney, Mr. Edmund White, Dr. Charles Symes, Mr. F. C. J. Bird, Professor H. G. Greenish, and Mr. J. F. Liverseege. The subjects chosen were of types still familiar, almost the only one that appears to "date" being the last, on "Glycerine Tincture of Cinchona."

The social events of the Conference were less numerous than those of the average Conference of recent years, but probably not less enjoyable on that account. On the eve of the opening session the president held a reception at the Hotel Mont Dore (now the Town Hall), at which everything seems to have given pleasure; and among other features of the occasion the *C. & D.* noted that Mr. Carteighe, who, it appears, was not often at Conference meetings, had made up for his "negligence" by bringing Mrs. Carteighe with him. On the afternoon of the following day there was an excursion by steamer to Swanage; the next afternoon a garden party was held in the grounds of the headquarters hotel; and the final day was devoted to an excursion through the New Forest, visiting Christchurch, Lyndhurst, Emery Down and Ringwood. On the way back "a short halt was made at Christchurch to water the horses." In its issue of August 17, 1895, *THE CHEMIST AND DRUGGIST* devoted a page to a group photograph taken outside the headquarters hotel, and identified 130 of the sitters—there were not many more than that—giving their names and a "key" on the next page. The list of members present who signed the book provided for the purpose includes (in addition to those already mentioned) the names of Mr. F. H. Alcock, Mr. Robert Chipperfield, Mr.

M. Conroy, Mr. R. C. Cowley, Mr. (afterwards Dr.) G. Claridge Druce, Mr. J. L. Ewing, Mr. J. W. Gadd, Mr. W. H. Gibson, Mr. T. B. Groves, Mr. R. Glode Guyer, Mr. E. M. Holmes, Mr. D. Lloyd Howard, Mr. John Humphrey, Mr. C. A. Johnstone, Mr. J. H. Lake, Mr. E. W. Lucas, Mr. Peter MacEwan, Mr. William Martindale, Mr. John Moss, Mr. A. J. Pidd, Mr. G. F. Schacht, Mr. G. S. Taylor, Mr. W. P. Want, Mr. W. Warren and Mr. H. Wilson.



THE MAYOR OF BOURNEMOUTH

(ALDERMAN H. G. HARRIS)

Opening Session

The Conference meeting this year is a "great adventure" in one respect. As has been indicated, the programme is spread over a longer period so as to obviate as far as possible the overlapping of the Science Section and the branch representatives' meetings. By the end of the week members of the Conference will be in a position to estimate the effect of this change. The opening session was held at the Town Hall on Monday afternoon in perfect weather. The apartment in which the function took place was gaily decorated with flags, and the platform had a tastefully arranged herbaceous border. Punctually at 3.30 the usual procession made its appearance; it included the chairman of the Conference (Mr. Harold Deane), the president of the Pharmaceutical Society (Mr. Thomas Marns), Alderman P. M. Bright (ex-Mayor of Bournemouth), Mr. T. Edward Lescher (treasurer of the Conference), Mr. C. E. Corfield and Mr. G. R. Boyes (general secretaries), Mr. R. R.

Bennett, Mr. F. E. Bilson, Dr. F. W. Crossley-Holland, Mr. J. H. Franklin, Mr. F. W. Gamble, Mr. H. N. Linstead, Mr. A. R. Melhuish, Mr. E. Saville Peck, Mr. P. F. Rowsell, Mr. E. H. Simmons, Mr. Herbert Skinner and Mr. J. F. Costello. After a welcome from Alderman Bright (who expressed regret for the absence of the Mayor), Mr. Deane read his address from the chair. Mr. Deane had chosen an unusual subject (the full text of his address will be found on page 719); his treatment of it was that of an expert and, moreover, was brief. He received a hearty and well-merited round of applause at the close. The customary vote of thanks was moved by Dr. Crossley-Holland (the immediate past-chairman of the Conference), who congratulated Mr. Deane on his choice of a subject and on his restoration to health. Mr. E. Saville Peck (Mr. Marns's predecessor in the presidency) briefly seconded the vote of thanks, adding his tribute to Mr. Deane's erudition.



With the chairman's reply the proceedings ended and the company adjourned to another part of the Town Hall for tea.

THE SPEECHES

ALDERMAN P. M. BRIGHT, a former Mayor of the borough, welcomed the Conference on behalf of the Mayor (Alderman H. G. Harris), who was unable to be present. His first duty he said, was to express the Mayor's sincere regret that he was not able to welcome those attending the Conference himself. Mr. Harris, however, was away from the town, but hoped to be at the banquet on the following night. There was no Conference more welcome to Bournemouth than the British Pharmaceutical Conference. "We recognise your valuable services to the community, your influence and power," said Alderman Bright. "We are very glad to welcome you to Bournemouth. You have come to us at the most beautiful time of the year, and I think we can say that you have come to the most beautiful health resort in Britain." He hoped the Conference, although they had a good deal of business to discuss, would have a sufficient margin of time left to see Bournemouth and its surroundings under ideal summer conditions, and when they went back they would take away with them the happiest impressions. "Bournemouth," said Alderman Bright, amid laughter, "offers exceptional advantages to people who, when they have retired from active life, want a place in which to live."

"I suppose you must be a very serious-minded people," he proceeded, explaining that he had spent a good deal of time and racked his memory to see if he could find any good stories relating to the profession or business of the chemist but he had had to give it up almost in despair. One story, however, he had found. Sir W. S. Gilbert once received a letter from an amateur musician, who said his score was certainly all right, for though educated as a chemist he was a born musician. Sir William replied declining his offer, saying he would far rather he had been born a chemist and educated as a musician. (Laughter.) Alderman Bright added the hope that those attending the Conference would enjoy their visit, and that their meetings would be most successful. (Applause.)

THE PRESIDENT (Mr. Thomas Marns), returning thanks, expressed appreciation of Alderman Bright's action in deputising for the Mayor. It had been his (the speaker's) privilege at Belfast to accept on behalf of the Conference Bournemouth's invitation. The weather might be described as real Bournemouth weather, and he had no doubt that at the end of the week they would go away with memories they would retain for a long time to come. They were proud to have with them that day Mr. Bilson, who had occupied the three principal offices in pharmacy—those of treasurer, vice-president and president. The British Pharmaceutical Conference met in Bournemouth forty-one years ago, and on that occasion Mr. Bilson was one of those who made the arrangements. After that interval of forty-one years he was again helping to make

the Conference a memorable one. It was not given to many to be able to bridge such a gap, and he wished to congratulate Mr. Bilson on his health and on the pleasant smile his old friends knew so well. They all hoped Mr. Bilson would be spared for many years to live and work in Bournemouth, and to continue his activities on behalf of pharmacy.

Turning to Alderman Bright, Mr. Marns said: On behalf of the Conference we accept your welcome to Bournemouth. We know we are going to have a wonderful time, and that when the end of the week comes and we return to our various centres we shall take with us happy memories of your beautiful town and think kindly of it. (Applause.)

Apologies for absence were received from Dr. C. H. Hampshire (vice-chairman of the Conference), Dr. David Hooper and Mr. W. A. H. Naylor (vice-presidents), and Mr. John Keall, ex-president of the Pharmaceutical Society.

The Chairman then delivered his address, which is printed in full on pp. 719-721.

VOTE OF THANKS

DR. CROSSLEY HOLLAND, proposing a vote of thanks to the Chairman for his address, said he was sure the Conference would wish him to congratulate Mr. Deane on his restoration to a very much better state of health. It might not be known to some of those present that after Mr. Deane's appointment as Chairman there was a grave doubt as to whether he would be able to take the chair. But in his delivery of the address they had had visible evidence of his restored state, and they had listened to it with a great deal of pleasure and instruction. Dr. Crossley Holland mentioned that it was seventy-three years that day since the late Henry Deane was not only the first President of Conference, but gave the first address. "I think we can say that the mantle of the departed Elijah has fallen in very graceful folds upon the modern Elisha," he added. As the Conference was well aware, nothing in the nature of discussion followed the Chairman's address, but he wished to interpolate one thought regarding the importance of the cultivation of vegetable drugs. There still remained in the plant some elusive quality which was essentially in that plant. He was sure that when they had the pleasure of reading Mr. Deane's lecture they would be convinced that he had made a very definite contribution to the treasury of pharmaceutical knowledge.

MR. PECK, seconding, said it was interesting that Mr. Deane had drawn attention to the fact that seventy years ago pharmacy was in a depressed condition. Looking round at the company present he (the speaker) thought it had considerably cheered up—(laughter and applause). He had also been interested in Mr. Deane's remarks on the dieting of the young, and in his references, both humorous and serious, to economics, agriculture and sociology. He felt that every word of the address was really strong meat and could be relied upon. (Applause.) MR. DEANE acknowledged the vote of thanks.



MR. AND MRS. N. N. ARMITAGE



MESSRS. FORREST, KIRKPATRICK
AND TATE



THE PRESIDENT
(MR. T. MARNS)



MR. H. M. HIRST AND MR. RUTHERFORD
HILL, O.B.E.



Mr. Harold Deane's Conference Address

THE CULTIVATION OF DRUGS

IT has become the custom the last few years to give a title to the chairman's address, so I have followed it, but this will be more discursive than is justified by the title; for one thing little can be said on the subject from a strictly pharmaceutical point of view; it is really a branch of agriculture, and though I am going to call your attention to some aspects of agriculture that are usually overlooked by townsmen, which most of you are, I shall not go into technical details; another thing is that I am the grandson of the first president of the Conference and I cannot resist the temptation to allude to some points in the addresses which he gave.

There is a tendency to look on the position of pharmacy in the past as being much superior to that in the present day, but these addresses lay considerable stress on its bad position and on the help the Conference should be in improving it. Many of these hopes have been fulfilled, but it is interesting to find that several statements could be made to-day almost without change. For instance:—

"At the present time the profits resulting from the exercise of our deeply responsible occupation are so small, and the necessity for personal attention at every hour of the day and night so urgent and imperative, that the mind becomes depressed, and a man seems to live for no other earthly object than to keep soul and body together with the scanty pittance his business brings him in."

That was seventy years ago. He dealt with the education, or, rather, what at that time was the lack of education, of pharmacists; this has been completely changed, though it is still a matter of controversy how far the change ought to go. The sale of poisons by ignorant and untrained persons was then a public danger. A confectioner at Bath, wishing to improve the appearance of his buns, sent for some lead chromate for the purpose; sulphide of arsenic was supplied and used. Another confectioner sent for plaster of Paris to make peppermint lozenges; the dealer sent his errand boy up to the attic to get it out of a cask; he brought down arsenic. The dealer was tried, but the judge held there was no criminal negligence. The various Pharmacy and Poisons Acts have completely altered the position. But it is interesting to note that one suggestion made then was that no one who could not read and write should be permitted to sell poisons. Criticism of a recently published *Pharmacoepoia*, the cutting of prices, and the misuse of methylated spirits were matters touched on which still are alive. But a last quotation I shall make is a sound prophecy, and leads me nearer to the subject indicated by my title, since the conclusion would be that the cultivation of drugs, as far as this country at any rate is concerned, is not likely to increase in importance.

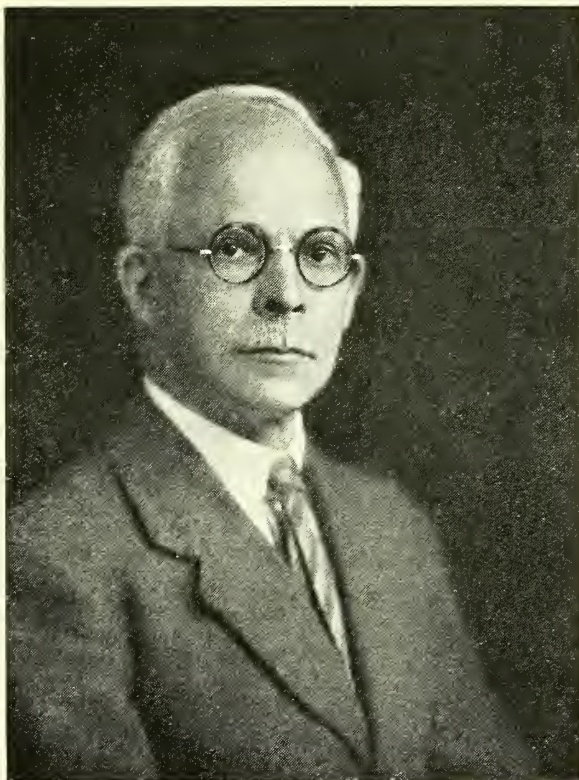
"The tendency of medical practice in the present day is,

perhaps, against us in the matter of physic, but it is assuredly in our favour in the matter of regimen, and we may yet live to see the time when our leading pharmacists may have to devote a still larger proportion of their attention to dietetic articles."

Many pharmaceutical speakers have pointed out in the last few years how modern medical practice is using drugs, as apart from vaccines, hormones and so on, in a diminishing degree, but recent research on nutrition has shown that faulty feeding is responsible for such a large proportion of the ill

health of the population that if this were corrected those engaged in both medicine and pharmacy would find much of their occupation gone. It can be stated without doubt that a benevolent dictator (if you can imagine the union of benevolence and dictatorship) could in the course of a generation increase the average height of the population by two or three inches with a corresponding increase in weight and strength and an enormous increase in general health, by ensuring that every child should have an adequate and properly balanced diet. But it is not only children who require a proper diet. Sir John Orr has just shown that 50 per cent. of the population cannot have a diet which will produce the highest possible state of health because they are unable to afford it, while the food of 30 per cent. of the population is seriously below this level.

The social, economic and political causes which tend to prevent or to aid the rectification of this state are matters of keen controversy and cannot be mentioned here, but those who might be alarmed by the thought of their livelihood being taken away may perhaps take comfort in the thought that the only organisations that show much vigour in urging the Government to take



MR. HAROLD DEANE, B.Sc., F.I.C., Ph.C.

action about food are those of the farmers and dealers in agricultural produce, and all their efforts are directed to increasing prices and so making it more expensive to get a proper diet. In any case, such a large change must be slow. Even if a man or woman can afford a good diet he may not have the knowledge of how to obtain it, and undoubtedly most people who can afford it eat too much, and what they eat is not properly balanced, and then they have to fall back on drugs to correct the results. Another opening still left for the pharmacist is due to the fact that even with an adequate income it is not by any means easy, in Great Britain, to get a balanced diet which contains the optimum amount of vitamins and such mineral substances as iron, calcium and iodine, so that it is wise for everyone to take some vitamin concentrates, at least in the winter, while mothers and children are most likely to require some mineral addition at times.

The change I have mentioned will be slow, but the tendency of doctors, firstly to use less drugs and secondly to prefer definite chemical substances to preparations made from natural



drugs, is likely to increase. The earliest list of drugs in existence, the Ebers Papyrus, made in Egypt 4,000 years ago, contained some hundreds of drugs; if you add all the drugs included in the mediæval herbals and then all those introduced to Europe since the discovery of America and those known to be used in India and China the total must run into tens of thousands. The latest British Pharmacopœia included sixty-three. There is a large number, hundreds, of other drugs that are still in use, but this figure shows the tendency of the most up-to-date medical practice. I shall make myself unpopular by pointing out that the original medical practitioners were priestly magicians, "medicine men," and their treatment was a mixture of magic and religious superstition; their use of drugs was based on no sort of scientific observation, other than the obvious one that some drugs can produce very notable and frequently unpleasant effects on the human organism. Though as time passed there were a few men such as Galen who tried to base their practice on observation, it did not amount to much, and until the last 150 years or so there was little real science applied to therapeutics, so that the use of drugs was based on unverified assumptions. In our own times the application of scientific methods to the study of the actions of drugs in disease has increased and experimental therapeutics is a growing subject. Nevertheless, many medical men still follow tradition, and, if challenged, support their action on the ground of clinical experience, overlooking the fact that in a field so deeply bound up with our emotions as the cure of sickness, observations even by a trained man are very liable to be unreliable unless under rigidly controlled conditions. The wide use in popular self-medication of many drugs which scientific evidence indicates are useless shows how powerful psychological influences are.

Falling off in the Use of Drugs

Clinical observers have one recent victory which they can boast of; they firmly refused to accept the conclusions of the pharmacologist that the B.P. 1914 liquid extract of ergot was practically inert, and further investigation has shown that they were right. On the other hand, cod-liver oil is an absolute cure for rickets; this drug was first introduced into England 170 years ago and yet books on therapeutics printed twenty-five years ago failed to recognise the fact, and it was not until evidence was produced from the physiological laboratory that its properties became universally recognised, and there are still doctors in practice who refuse to believe in the action of vitamins. Therefore, in addition to the general falling off in the use of drugs, I think there will be a greater reduction in vegetable drugs and that only such plants as the opium poppy, digitalis and belladonna, which have very definite active principles with fairly easily determined properties, are likely to remain of importance, though how fast the change will go is doubtful; it depends largely on the spread of knowledge and education, and the forces which oppose this are powerful. I do not think any one here need fear that it will come rapidly. No doubt there are drugs which have properties at present unknown or unproved that may be valuable and research might find them out. There are eminent men and also associations, particularly on the Continent, where vegetable drugs are still used much more largely than in England, who are very firmly convinced of this and are asking for Government assistance in encouraging the use of vegetable drugs, and several Central European governments are giving encouragement with a view to assisting the agriculturists who cultivate them, but research of this nature is so difficult and the expectation of getting positive results so low that it is not attractive to workers.

Now as I have said before, the cultivation of drugs is a branch of agriculture and there are two main forms of agriculture at present practised in the world. One is peasant farming, or small holding, where the farmer and his family do all the work and hired help is rare and little machinery beyond a plough and a harrow is used; the other large-scale farming such as is found in parts of America and the British Dominions, and now in Soviet Russia, where farms occupy thousands of acres, and are run, as far as employment is concerned, almost on factory lines, and machinery is used to the utmost. Some people make a distinction between peasants and small holders; the peasant is mainly self-supporting on what the land produces, but the small holder grows crops to sell. Nowadays,

however, few districts are so primitive that the peasant does not sell much of his crop to procure clothes, tools, kitchen utensils and so on, as well as to pay taxes, so the distinction is not important. Now English farming is in an intermediate position, most of its cultivated land is in farms of moderate size; this is one of the reasons why English agriculture has at present such a difficult struggle. It lacks the long hours of work from dawn to sunset given by every member of the family from the child of three to the grandmother of seventy, with every one feeling a personal interest in the job, which enables the peasant to produce cheap crops, and it also lacks the free use of machinery and very highly skilled management which large-scale capitalism is able to supply. This is due to historic causes; the improvement in farming methods in which England was a pioneer in the eighteenth century made it profitable to dispossess the peasant and bring the land into larger holdings; this was done, with a great deal of callousness and immense suffering for the poor; you remember Goldsmith's protest:

"A time there was, ere England's griefs began
When every rood of ground maintained its man;
For him light labour spread her wholesome store,
Just gave what life required, but gave no more;
His best companions innocence and health,
And his best riches ignorance of wealth.
But times are altered; trade's unfeeling train
Usurps the land, and dispossess the swain."

Changes in Agricultural Conditions

Farms got as large as eighteenth-century methods made profitable, but the change since then has been rather slow, because in the nineteenth century capital found a more profitable vent in industry and in developing lands overseas, while the landowner in any case would give no countenance to anything which would interfere with the chief use of the country in providing animals for him to kill in an expensive manner. It is doubtful if all the efforts of the Ministry of Agriculture can save the present type of farming, and when it goes most of the beauty of the English countryside will go with it. The bungalow builders' efforts will be seen to be mere amateur trifling when real commercial business men get to work on the farm. Whether small holdings or large-scale farming is to win depends on many things. Sir Daniel Hall says: "From the point of view of business, of economic agricultural production, the small farm is no longer justified; every step in scientific and mechanical progress widens the gap in efficiency between the large and the small holding. Agriculture is an industry like any other, equally open to the advantages of large-scale working with its command of capital, knowledge and organisation." That is the economic position, though there are districts where, from the geological formations, ordinary large-scale farming is impossible and small holdings are likely to survive on economic grounds, but even these places the Forestry Commission will be able to cover with its dull rows of ugly conifers. If, however, people are willing to pay the price, economic advantage can be disregarded—the sugar beet industry is a pertinent example—and though Goldsmith laments:

"Princes and lords may flourish or may fade—
A breath can make them, as a breath has made;
But a bold peasantry, their country's pride,
When once destroyed, can never be supplied."

there are many who are anxious to try to establish them again. The agricultural labourer has to work long hours for very poor pay; the small holder has to work longer and harder for little, if any, better remuneration. The advantage he has is that he feels himself independent; he has no master to tell him what to do and where and how to do it, and he cannot get the sack; on the other hand he can, and frequently does, go bankrupt.

Now the Englishman has the reputation, all over the world, of being extremely lazy; the foundation for this is that he generally prefers to let machines do laborious jobs, and that when he has earned sufficient money by "gainful employment" he prefers to change his employment to knocking balls about or something else at which he will expend a good deal of energy; still I do not think many men of the nation which invented the week-end and the early closing day will take kindly



to the life of a small holder. Bertrand Russell says: "The peasant everywhere is cruel, avaricious, conservative and inefficient." Some of these characters commend them to many modern rulers, and also make it almost impossible to change over to large-scale farming except by the use of force. This has been employed ruthlessly in Soviet Russia, but elsewhere in Europe change in this direction is likely to be slow. Now the cultivation of drugs has many points which fit it for peasant industry.

Originally wild plants were collected and at times when there was a little easing off of the constant toil of the farm the family would go out and collect what they could. In the course of time this led to medicinal plants becoming rare and the peasant started to cultivate them. Now cereal grasses have been cultivated for 5,000 years or more, and the brassicas have been cultivated for some hundreds of years and thus they have become adapted for mechanical methods and mass growth. Many medicinal plants, being unchanged from their wild condition, are not so adapted and require more careful handling than mechanical cultivation will give. They also come to maturity at different times and can thus be worked without interference with the main crops. Moreover, as the total consumption of most drugs is relatively small, a large crop on a big farm can easily cause the price to collapse, whereas the small amounts raised on small holdings are less likely to upset the market. These crops can thus be a very useful side-line for the small man, and in Central Europe the governments are encouraging their cultivation and giving instruction in improved methods, particularly as regards harvesting and drying. In the latter operation the hotter and drier climate of Central Europe enables open-air drying to be successfully carried out, whereas in England artificial methods must be used, with corresponding capital charges. Probably as a result of this government action, there has been a great improvement in the last few years in the quality of many drugs, and Czechoslovakia in particular sends out some very nice specimens.

Experimental Cultivation

A large proportion of the drugs that are cultivated in Europe have either never been used to any extent in England or else have been given up in ordinary medical practice and are now rarely used here. The Russian Government is also taking an interest in the matter and have set up a department to carry out investigation in drug cultivation and are trying out large-scale cultivation on some of the collective farms. These experiments in Russia are interesting; whether they will be really useful to medicine depends on many things. In the first presidential address to this Conference investigation into the effects of cultivation on drugs was suggested, but very little has been done; a very few papers have been read before the Conference and some work has been done by some of the agricultural institutes in the United States. All plants and animals which have been cultivated or domesticated by man have been profoundly modified from their wild condition. Of late years this has been carried out deliberately, and the difference between a Cox's orange and the crab-apple, or a modern wheat plant and the wild grass from which it is descended, or an exhibition rose and the dog-rose of the hedgerows, would fill us with astonishment if we were not so accustomed to it.

Some change is bound to take place whenever a plant is cultivated, whether the cultivator tries to improve his plants deliberately or not. The plant that produces most seed will have more offspring in the next crop than the one producing fewer seed, and thus the more prolific seed-producing variety will drive out the others; if the cultivator deliberately chooses seeds from the plants he prefers, he will produce more rapid and greater changes; if he uses modern knowledge of genetics, changes will be enormous and still more rapid. Such changes can of course be produced in medicinal plants as in others, but there are various snags in the way. Firstly, the question of cost; the raising of new varieties of daffodils or of roses for instance is carried out by private firms with a view to profit, but owing to the time required and the enormous proportion of useless plants which have to be grown only to be thrown away it is very costly, while the raiser can only get high prices for his new variety for a year or two, until other growers have raised stock of it. It is therefore doubtful if it is really a profitable occupation in itself, and the advertisement is probably more

useful to the raiser than the actual production of the new variety. The really great advances in agricultural plants such as Yeoman wheat are nowadays more often made by organisations which are not run for profit. Since the consumption of most drugs is relatively small, the chance of a private firm making a profit out of raising a new variety is still smaller, and they are not likely to spend much money on it, while with the small amount of public money allotted to agricultural research in this country, drugs are not likely to be chosen. Secondly, no one knows what changes are wanted; it would be relatively easy to increase the yield per acre, or to get a plant with a stronger smell or perhaps a brighter colour, but what would be the effect of that on its medicinal activity? It would be necessary first to know what its real medicinal value is and secondly how to determine this in a single plant without preventing the plant bearing seed; this would require a lot of investigation before any cultural experiments of any value could be started.

Investigation Required

Possibly the Soviet Government, as they seem to be working on a large scale, may intend to carry out investigations on these the only really scientific lines, but I doubt if any other body will. To take an example, cultivated English henbane has an altogether different appearance from, and a stronger aroma than, the imported herb. The ordinary pharmacist will say it is a much superior drug, and a tincture made direct from English drug hardly seems the same preparation as the one made by diluting a liquid extract made from foreign drug. Is there any difference in the medicinal activity? No one really knows. The compilers of the B.P. have assumed that the alkaloids are the only ingredients that matter, and have also assumed that the alkaloids are the same after an extract has been evaporated down as they were before. These assumptions are quite likely true, but there is no proof of them. The idea that heat has a bad effect on drugs is modern and is due to the chemist; in the good old days extracts were evaporated down over an open fire, and few, if any, doubted that the extract possessed all the virtues of the original drug. Still the real reason why tinctures made by diluting liquid extracts are included in the Pharmacopœia is that that method of manufacture is cheaper, owing to the possibility of saving loss of duty-paid spirit, and the Commission has followed what was a common commercial practice; even if they had thought that the original preparations were the better medicinally, there is the fact that although a pharmacist could usually tell the difference by organoleptic methods, there are no chemical methods available for distinguishing them, and therefore nothing that could be brought into a court of law, so that those who believe in the old vegetable drugs, if they wish to encourage their use, have not only to produce sound evidence of their value, but also readily usable methods of distinguishing between good and bad samples of their preparations, and except where the action is due entirely to one or two alkaloids this is a very difficult task.

In my discussion of cultivation I have assumed that social conditions will continue as they are with only such changes as are likely to follow from visible economic causes. If, however, as is not unlikely if war is not avoided, our towns are destroyed and the highly cultivated districts ravaged by poison gas, large-scale cultivation and highly expert pharmacy such as is represented by the present B.P. will become impossible, and peasant farming either by the inhabitants of the more remote mountainous districts which will not have been considered worth bombing, or by colonisation from abroad, will become general. Then, if the supporters of the "simple life" are to be believed, drugs will become unnecessary and the diet of the survivors will be similar to that praised by William Cowper as suitable to the finish of a hard day's work, and they will enjoy

"A Roman meal,
Such as the mistress of the world once found
Delicious, when her patriots of high note,
Enjoyed—spare feast. A radish and an egg."

That, however, is a poet's view, and the idea the peasants are exceptionally healthy is a fable, so no doubt pharmacy of a primitive kind would continue to exist.



Trade Notes

THIS WEEK'S ISSUE.—The advertisements of the following firms appear in photogravure:—

Allen, Stafford & Sons, Ltd.	Lax & Shaw, Ltd.
Arnfield, J. C., & Sons, Ltd.	Mather, Wm., Ltd.
Bakelite, Ltd.	Mawdsley, D., & Co.
British Cod Liver Oil Producers (Hull), Ltd.	Methylating Co., Ltd.
Brook, Parker & Co., Ltd.	New Era Treatment Co., Ltd.
Butler & Crispe.	Pharmaceutical Specialities (May & Baker), Ltd.
Cooper Laboratory, Ltd.	Riley, J., & Sons, Ltd.
Cuxson, Gerrard & Co., Ltd.	Steel, Adams & Co., Ltd.
Dearborn, Ltd.	Thompson, John (W.D. 1921), Ltd.
Gardner, W., & Sons (Gloucester), Ltd.	United Glass Bottle Manufacturers, Ltd.
Goodall, Backhouse & Co., Ltd.	Washington Chemical Co.
Guest, T., & Co., Ltd.	Whiffen & Sons, Ltd.
Harris, Hart & Co., Ltd.	Wood Bros. Glass Co., Ltd.
Hough, Hoseason & Co., Ltd.	Woolley, J., Sons & Co., Ltd.
Jeffreys, Miller & Co., Ltd.	

The advertisements of the following firms appear in colour:—

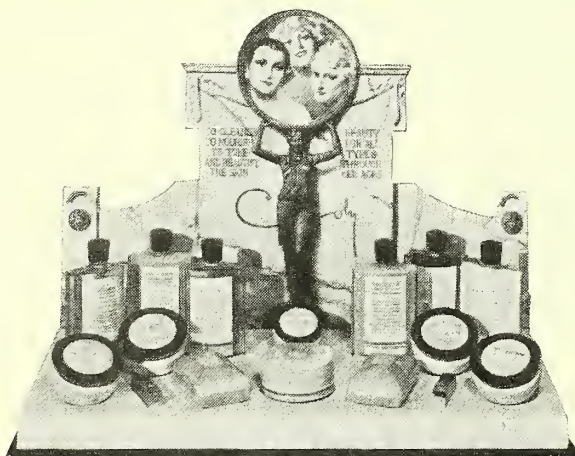
Beechams Pills, Ltd.	Lilly, Eli, & Co., Ltd.
Bourjois, Ltd.	Napp, H. R., Ltd.
British Drug Houses, Ltd.	Nuro (Biggleswade), Ltd.
Burgoyne, Burbidges & Co., Ltd.	Ransom, W., & Son, Ltd.
Cephos, Ltd.	Surgical Hosiery Co., Ltd.
Eucryl, Ltd.	United Glass Bottle Manufacturers, Ltd.
Hampson, F., Ltd.	Veno Drug Co., Ltd.
Harrison, A., & Sons, Ltd.	Willows, Francis, Butler & Thompson, Ltd.
Heward, R. H., Co.	
Heymann, H., Ltd.	

DISINFECTANTS.—The Killgerm Co., Ltd., Cleckheaton, Yorks, invite inquiries for disinfectants of all kinds.

MAGNESIUM TRISILICATE.—Evans Sons Lescher & Webb, Ltd., 56 Hanover Street, Liverpool, have issued a brochure explaining the action of magnesium trisilicate, which is described as a highly active antacid and adsorbent.

ANNUAL OUTING.—About fifty members of the staff of Chas. Zimmermann & Co., Ltd., 9 and 10 St. Mary-at-Hill, London, E.C.3, who were the guests of the chairman of the company, Mr. Charles Bell, spent a very enjoyable day at Hastings on Saturday, June 20.

DISPLAY BY COTY.—Illustrated herewith is one of the handsome display cards issued by Coty (England), Ltd., 3 Stratford



Place, London, W.1, together with a selection of their products.

GAS MASKS OF ALL PATTERNS are issued by Siebe, Gorman & Co., Ltd., 187 Westminster Bridge Road, London, S.E.1. Details are given in our advertisement pages.

NIVEA CREME.—Illustrated herewith is a specimen of the poster and showcard of the new summer show material for Nivea Creme. All retail chemists who stock Nivea Creme and who have not yet received one of each specimen will be supplied on request.



DENTURE PASTE.—Gaskell, Ltd., 273-387 Regent Street, London, W.1, offer a denture paste which it is claimed removes deposits and keeps dentures clean and sterilised. Cash prizes to the value of £50 are offered to the public for a slogan.

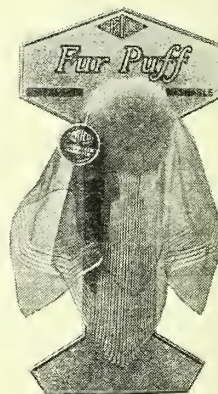
PYREX SYRINGES.—The General Surgical Co., Ltd., 147 Farringdon Road, London, E.C.1, have introduced hypodermic syringes with barrels made from Pyrex glass, which possesses strength and durability and, as is well known, is much superior to glass of ordinary composition. It does not crack or break



when suddenly transferred from 300° C. to water at 5° C. This attribute will be a boon to doctors, hospitals and institutions. Illustrated herewith is a specimen syringe, which, apart from the Pyrex barrel, is entirely of metal. The capacities issued are 1, 2, 5, 10 and 20 c.c. Further details are given in our advertisement pages.

PRICO FUR PUFFS.—Illustrated herewith is a recently introduced washable handkerchief fur puff mounted on a silver and black display stand. The manufacturers are Grimwood & De Geus, Ltd., Finsbury Court, Finsbury Pavement, London, E.C.2. The puffs are issued in cellophane envelopes so that the puffs remain untouched until they reach the hands of the user. Seven varieties of these handkerchief puffs are issued. Specimens of the stand are offered free and supplies and obtainable through the usual wholesalers.

MACLEANS PRODUCTS.—Macleans, Ltd., Great West Road, Brentford, Middlesex, have sent us new show material which they have recently produced for Macleans peroxide tooth paste and Macleans brand stomach powder. New illustrations of the familiar slogan "Did you Maclean your teeth to-day?" appear prominently. The cards are printed in colour and should prove effective sales material. A wide range of sizes is available for chemists on application.





Births

Notices for insertion in this column must be properly authenticated

SIMMONS.—At St. Elmo Private Nursing Home, 86 University Street, Belfast, on June 14, Mabel, wife of R. A. E. Simmons, Ph.C., Glengormley, of a son.

Marriages

HARRY—NICHOLS.—At St. Mark's Church, North End, Portsmouth, on June 17, Arthur W. L. Harry, pharmacist at the Royal Naval Hospital, Haslar, to Gwendoline Nichols.

OPENSHAW—KEENLISIDE.—At Lee Congregational Church, Horwich, on June 13, Robert Openshaw, chemist and druggist, to Mabel W. Keenlside.

SMITH—POLLOCK.—At Helen's Bay, co. Down, Presbyterian Church, on June 18, Leslie David, only son of Mr. F. J. Smith, Hampstead, London, N.W. (Sangers, Ltd., druggists' sundriesmen), to Frances Pollock.

Deaths

ELLIS.—On June 21, Mr. Arthur Ellis, chemist and druggist, 162 Springvale Road, Sheffield. Mr. Ellis, who passed the Qualifying examination in 1920, was a brother of the late Mr. Bernard Ellis, chemist and barrister, and originally assisted him in his shop in Eccleshall Road. Before going to Springvale Road Mr. Ellis was in business in Shalesmoor.

GREENWOOD.—On June 17, Mr. Ronald Oliver Greenwood, chemist and druggist, 203 Portland Street, Southport, Lancs. Mr. Greenwood qualified in 1928.

HILL.—On June 19, Mr. John Staniforth Hill, chemist and druggist, Warrington, aged eighty. Mr. Hill received his education at the Royal Masonic School, then situated at Wood Green, London. After serving his apprenticeship at Blackpool he qualified in 1880. In that year he went to Warrington as assistant to the late Mr. J. Rymer Young, with whom he later entered into partnership and founded the business of Hill & Co. In 1920 this was converted into the private limited company of Hill & Co. (Chemists), Ltd. In 1928 an amalgamation with the business of Mr. H. Smith took place, when the title of the company was changed to Hill-Smith (Warrington), Ltd., Mr. J. S. Hill being the governing director. He led an active life and was at business until a week prior to his death. Mr. Hill was a trustee of the Warrington and District Savings Bank. In Masonic circles he was well known, having during his thirty-eight years' membership of the Order filled many offices.

ROBERTS.—At Frertherne Nursing Home, Welwyn, Herts, on June 21, Mr. Herbert Charles Roberts, M.P.S., 11 The Valley Green, Welwyn Garden City. Mr. Roberts passed the Minor examination in 1902.

WASSALL.—At Sutton Coldfield, recently, Miss Alice Wassall, chemist and druggist. Miss Wassall qualified in 1904.

Personalities

MR. S. E. GREENWOOD, chemist and druggist, Bolsover, is on a tour in Austria.

MR. JOHN RUTHERFORD HILL, resident secretary in Scotland of the Pharmaceutical Society, was awarded the Order of the British Empire in the King's birthday honours list.

MR. DUDLEY FIELDEN, who is well-known in the Home and Eastern Counties, has joined the sales staff of Smith & Co., manufacturing chemists, 132 Borough, London, S.E.1.

MR. W. G. SNOW, chemist and druggist, Birkenhead, who recently underwent a severe operation, has now returned home and is making slow but steady progress towards recovery.

In the final list of the Cambridge Tripos examination (Natural Sciences, Part I) published on June 22 is the name of Mr. M. W. Shadforth, son of Mr. William Shadforth, Ph.C., London, E.3.

MR. S. FLEMING, Ph.C., 95 Charlotte Street, London, W.1, formerly of 81 Duncairn Gardens, Belfast, was a member of the Irish international team at the international clay pigeon shooting match, held at Llandrindod Wells on June 18, 19 and 20. Mr. Fleming was a member of the Irish international team on three previous occasions.

MR. ANGUS McDONALD (general manager, National Drug Industries, Ltd., London, E.1) and Mrs. McDonald celebrated their silver wedding on June 7. Mr. H. W. Harrie, senior representative of the company, on behalf of the staff, presented them with a silver salver suitably engraved, two silver bonbon dishes, and an illuminated scroll of congratulations.

CERTIFICATES OF NATURALISATION have been granted to S. Betish, dentist, 15 Gathorne Terrace, Leeds, 8; R. A. Fanous, medical practitioner, "The Grange," Reddish Road, Stockport; O. B. Deiter, osteopath, 2 Norfolk Street, London, W.; E. G. H. Gross, chemical manufacturer, Holmwood, Addlestone, Surrey; V. de Tilleman, osteopathic physician, 1 Portland Place, London, W.1.

MR. CHARLES HENRY HUISH, of the representative staff of Willows, Francis, Butler & Thompson, Ltd., manufacturing chemists, London, E.8, aged eighty-eight, retires from travelling on July 1. Born at Ilchester, he was apprenticed to pharmacy at Crewkerne in 1863. Coming to London in 1868, Mr. Huish joined the old-established firm of wholesale druggists, Burgess, Willows & Francis, and in the following year became a town traveller. Having held this position for about four years, he went to Mackeys, of Bouverie Street, as town and country traveller, staying with them about thirteen years and leaving to join Corbyn, Stacey & Co. (both these firms have since been absorbed by Willows, Francis, Butler & Thompson, Ltd.). After a short period with John Richardson & Co. (Leicester), Ltd., Mr. Huish rejoined Willows & Co. in 1909.

Business Changes

DRAKE & DAHM (TRANSLATORS), LTD., have removed to 18 Bartlett's Buildings, London, E.C.4. Their telephone number is unchanged: Central 3989.

J. G. JACKSON & CROCKATT, LTD., Simplex Works, Darnley Street, Glasgow, have appointed Edward G. Herbert, Ltd., Atlas Works, Levenshulme, Manchester, to be their agents in the counties of Lancashire, Yorkshire, Cheshire, Derbyshire, etc. J. G. Jackson & Crockatt, Ltd., are mechanical and chemical engineers, and specialise in machines for filling and packing powders and plastics of all kinds, and also manufacture granulating machinery.

Wills

MR. THOMAS PATTERSON, Oakdene, Grimsargh, near Preston, Lancs, chemist, who died on January 8 last, has left property gross value £7,972, with net personalty £5,608.

MR. JOHN MADISON CALEY, 17 Lowlands Avenue, Tettenhall, Staffs, chemist and druggist, who died on November 30 last, left estate gross value £1,399, with net personalty £743.

MR. PETER HUGHES DAVIES, 62 High Street, March, Ely, chemist, who died on March 28 last, aged eighty-three, left property gross value £8,098, with net personalty £3,283.

MR. ARTHUR ALEXANDER GILES, 22 High Street, Ventnor, Isle of Wight, chemist and druggist, who died on October 4 last, left estate gross value £1,563, with net personalty £1,488.

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| E/23 Cook's nicotine spray | ginger |
| R/19 Diadem cameras | S/23 Puran cleansing fluid |

THE
CHEMIST AND DRUGGIST

VOL. CXXIV.

June 27, 1936

NO. 2942

This Issue

FIRST of all let us meet the comment of those critics who may say: "It is not so good as it used to be" with Punch's famous retort: "And it never was." However, we are sanguine enough to believe that this issue will be worthy of a place alongside its famous predecessors. It is in the true sense of the word a colourful number. It was R. L. S. who immortalised the words (which he stated were "familiar to all students of Skelt's Juvenile Grammar"): "A penny plain and twopence coloured." Although this number is, as we have described it, a colourful one, yet it is the plain weekly edition of THE CHEMIST AND DRUGGIST. As readers are aware, there are many special issues of this newspaper during the year, but they deal largely with selected subjects which are of special interest to certain sections of the trade. This issue, which is the Special number amongst specials, is somewhat different in that it is intended to give an indication of the ramifications of our craft.

With regard to the contents: A colour chart has been prepared as a means of assisting chemists to standardise what is at present considered to be rather a chaotic state so far as colour schemes of cosmetics and allied products are concerned. Few chemists can stock all the shades of powder, etc., which are on the market, and if this chart, laboriously compiled, is of assistance to the chemist in business (and may be to the manufacturer), it will have achieved its object. Another interesting colour section is that dealing with colour photography. That cradle of British commerce proclaimed by Queen Elizabeth in 1571—the Royal Exchange—is described in an authoritative manner from official documents. The London University, which celebrates its centenary this year, is the subject of what we hope is an interesting article. Manufacturers of proprietary medicines will no doubt be interested in the treatment meted out to those who registered "patent" medicines in earlier days. The discovery of oxygen is a subject of perennial discussion, yet in the article published in this issue we feel that the facts are brought together in a manner which is worthy of a leisured perusal. Collectors of pharmacy pots and mortars will note the very fine collection of *objets d'art* in the possession of Dr. Murray.

In addition to the article on selling cosmetics, informative notes are given in regard to the preparation of sun-tan preparations and cinema sprays. The manufacture of cod-liver oil and of malt extract are also associated in this number. The oldest pharmacy in Europe contrasts strangely, perhaps, with pharmacy in the finest ocean liners of Great Britain, France and Germany. "Pharmacy's 'Offspring'" will more than ever confirm the view that, as a training ground for greater things, pharmacy is unique. In the achievements recorded, it is shown that pharmacists have an advantage in gaining honour, fame and wealth, if the trade is not big enough to contain their ambitions. We have endeavoured to direct the attention of chemists to the opportunities attached to the opening of a new

department to deal with surgical apparatus. This seems to be a fitting undertaking for those who are engaged in the trade. The importance of machinery is exemplified in the news article on the British Chemical Plant Exhibition now open. In medicine, some indication of the use of tannic acid in the treatment of burns, which is the most modern method of dealing with such injuries, is given, together with a brief account of the newest therapy in hay fever treatment; the importance of hormones, also, is considered to be worthy of a place in this issue for the interest and information of pharmacists, and it is perhaps especially interesting in view of the introduction of physiology into the curriculum.

We have dealt briefly with the literary contents of this issue, but we should like in passing to draw attention to the very fine type of advertisements which are appearing alongside these pages. Photogravure and colour work have been used to advantage, and we feel confident that the advertising pages of this issue are a sufficient indication of the fact that trade journal advertisements can, and do, reach a very high standard. In raising the standard to its present level, THE CHEMIST AND DRUGGIST is satisfied that it has played no small part.

Discussion on Apprenticeship

IN the debate on the Finance Bill considered in Parliament last week, some interesting statements were made in regard to the question of apprenticeship, the question arising out of a proposal to allow deduction in respect of children who are undergoing full-time instruction at a technical school or as apprentices with provisos as to time involved and emoluments paid. According to the report, Mr. Lansbury is stated to have said that under present conditions it might be better for a boy or girl not to serve an actual apprenticeship, but to learn for two years how to adapt himself or herself to the mechanised system of production to-day. In his view the apprenticeship system has broken down. Mr. Lansbury was obviously considering the mechanical trades. The Chancellor's view of the reason for the apprenticeship system's breakdown was that it means a considerable sacrifice on the part of the persons concerned. While he would be glad to see the system revived, apparently he was not in favour of encouraging the revival of such a system. So far as pharmacy is concerned, the view commonly held is that there is little inducement for a youth to become apprenticed in a pharmacy, since in later life the prospect is narrow and remuneration is scanty. This may be true, yet this vocation is undoubtedly one of the finest training grounds available for youth, especially if such training is obtained in a pharmacy which retains some of the ancient glories of the craft. He learns precision, carefulness, cleanliness and a discipline which stands him in good stead in future life. If he does not make the most of his opportunities, then, like those in other branches of industry, he has only himself to blame. It is true that modern apprenticeship does not entail so many variations of training as did the pharmacy of a few decades ago. Nevertheless, the principles are there; and if pharmacy is not considered to be a satisfactory calling for educated youths, the fault, may lie "not in our stars, but in ourselves."



Sunburn and Sunbronze

THE cult of sunbathing has shown the necessity for the chemist to give some consideration to substances and preparations for the prevention of sunburn, in addition to those which are said to accelerate sunbronzing effects. The amount of pigment in the skin varies and depends on the proper functioning of the epidermal cells and it is increased by exposure to sunlight. This stimulation of pigmentation as a natural protection against sunburn produces sunbronze effects. Unfortunately, some persons burn first and never reach the bronzing stage. It is at this point the chemist may endeavour to assist Nature. A soothing alkaline lotion, after exposure to ultra-violet light, is found in the following:—

Sodii bicarb.	...	...	...	gr. xl.
Glycerin.	...	...	...	5j.
Liq. hamamel.	...	...	...	3ij.
Alcohol indist.	...	...	...	3ij.
Aq.	...	...	ad	3xx.

Calamine in watery or oily suspensions is efficient in mitigating the effects of exposure to light. Breakdown of the skin's natural resilience, from whatever cause, produces a sensitivity requiring something protective and soothing to help in bringing it back to healthy condition. At the same time the skin should not be over-coddled, as excessive protection produces a sensitivity which no cream or lotion is likely to eliminate. Calamine lotions containing lime water are not suitable after sunlight exposure; a good one is made with 15 per cent. of calamine, 5 per cent. zinc oxide, 10 per cent. glycerin, 25 per cent. distilled witch hazel and made up to 100 with water.

THE VALUE OF FLUORESCENCE

In light clinics many attempts have been made to enable longer exposure to ultra-violet light without production of erythema. Calamine is a favourite, but fluorescence of a substance is still made use of, though quite a number of practitioners say it is useless. Aesculin 5 per cent. is an old favourite, but in the American clinics it is stated to be useless, and whatever success is attained is due to the medium containing it. The latest product to be recommended is menthyl salicylate, but it is far too early for any opinion to be expressed. Quinine, uranium oxide, titanium oxide, barium sulphate, zinc oxide, and some aniline dyes that have fluorescence in watery solutions, alkaline or otherwise, have been tried. The knowledge gained is that fluorescence is largely dependent on the medium while the sensitivity of the skin in individuals is an incalculable variant. Stimulation of the natural pigment produced by exposure to sunlight is comparatively simple. Spirituous solutions are best made of 70 per cent. alcoholic strength with a substance having a browning effect and containing a fixative. Apart from dyes, practically any brown substance that will part with some colouring meets the requirements. Liquid creams may also contain the same colouring principle but the fixative in these cases is a suspended wax. Tannin bearing substances are frequently used. Oils containing pigments have become most popular and a standard formula is:—

Cudbear	...	...	...	2½ dr.
Henna	...	...	...	½ dr.
Arachis oil	...	...	...	3½ oz.

This is made by maceration and filtration.

CREAMS AND JELLIES

An American formula goes one better than this with aesculin 5 per cent. in a vanishing cream, but its effect is uncertain. A more modern one from the same source is: Phenyl salicylate incorporated in a cream as a topical application—it is stated to absorb the burning section of ultra-violet rays and so prevent sunburn. The strength is given as 10 per cent. in liquid paraffin and incorporated into a cold cream base. A tannic preparation with a fixative of tincture of benzoin is very satisfactory, but there is a danger of a grimy result during the hours of exposure. A formula suggested and stated to be excellent is:—

Ac. tannic.	...	...	...	gr. v.
Tinct. benz. simp.	...	...	...	℥xv.
Tinct. hamamel.	...	...	...	5ss.
Alcohol 70 per cent.	...	...	ad	3j.

A water soluble tannic acid jelly is advocated for ordinary burns, but objections have been made to its stickiness if used for the prevention of sunburning. For those who do desire a preparation of this nature their needs would be met by the following:—

Soluble gum	...	...	...	5.0
Tannic acid	...	...	...	2.0
Glycerin	...	...	...	3.0
Phenol	...	...	...	0.5
Water	...	...	to	100.0

The following spirituous lotion is useful:—

Ext. hamamel. liq.	...	...	...	5ss.
Glycerin.	...	...	...	℥x.
Liq. hamamel. dest.	...	...	...	5ij.
Alcohol 70 per cent.	...	...	ad	3j.

In addition to fluorescent substances some claims have been made for phosphorescent stimulating substances such as cadmium sulphide; the point claimed is that a small proportion of this chemical by its tint prevents erythema while allowing pigmentation. Fluorescing salts in suitable media will allow pigmentation without burning (acriflavine and soluble fluorescein are barred owing to their staining effects). Isamine blue is very fluorescent in dilute solution and it does not stain. Fluorescence is accentuated if the solution contains ½ per cent. sodium bicarbonate. Protective interference with the rays causing burns has been proved to be effective and simple, the only question arising is the method of application. Spraying, employed as in x-ray work, is not suitable. A non-greasy cream is the most satisfactory. The hydrogenation of certain fats with the production of sulphated fatty alcohols enables the preparation of a wider range than is possible with simple fats, aqueous or spirituous lotions.

PHOTO-SENSITIVE CHEMICALS

Bright clouds and blue sky give more ultra-violet radiation than the high sun and far more than the low sun. It is the high sun that burns, but to sensitive skins the brightness of the sky will frequently cause mild erythema which is troublesome unless properly treated. Certain chemicals, apart from the phenolic series, are sensitive to intense sunlight—some heavy metallic salts blacken, various quinine salts brown, chloral formamide browns, zinc oxide under undefined conditions darkens. In any case, salts of a preventive character, with certain dyes, can be used for cutting out the browning rays incurred during exposure. The salts are barium sulphate, titanium dioxide, and uranium oxide, and the dyes are isamine blue and waxoline brown. All these can be used in a very small percentage according to desire in a watery cream with a formula such as:—

Cetyl alcohol coml.	...	...	...	1 dr.
Cholesterol	...	...	...	10 gr.
Alcohol	...	...	...	2 dr.
Distilled water	...	...	to	3 oz.

The cream is made *secundam artem* and may be tinted with the dyes or there can be added one-half per cent. titanium oxide or one per cent. of barium sulphate, provided it is the fine variety. A liquid cream with any of these additions is also effective, non-greasy, and vanishing. If a solid cream is desired one can be made as follows:—

Stearic acid	...	...	...	5.0
Cetyl alcohol	...	...	...	1.5
Cholesterol	...	...	...	0.5
Borax	...	...	...	1.0
Titanium oxide	...	...	...	0.25
Barium sulphate	...	...	...	0.5
Alcohol	...	...	...	15.0
Distilled water	...	...	to	100.0

Ichthyol mixed with three parts of industrial alcohol, allowed to stand and filtered, provides a clear solution which can be used for tinting creams, fatty or otherwise, or alcoholic solutions of the surface resisting strength which definitely prevents sunburning.

Where large surfaces are to be exposed, creams, oils and lotions are too troublesome. A suitably tinted powder is more easily applied and equally effective.



PLAN in Selling "Make-up"

A practical guide for use at the counter: "THE CHEMIST AND DRUGGIST" Cosmetic Harmony Chart

THE CHEMIST AND DRUGGIST takes the lead in providing those engaged in selling beauty preparations with a practical colour chart applicable to all brands of cosmetics. Its object is to replace with orderly standards a situation at present full of confusions and contradictions. The chart is the first of its kind. There are in existence various tables for the guidance of purchasers, issued by publications specialising in make-up hints; a number of manufacturers, moreover, issue colour guides for their own preparations. From the retailer's point of view, however, a main difficulty hitherto has been lack of uniformity in the descriptive terms used. Thus, what one maker describes as "rachel" may correspond to another's "naturelle," while a third may apply some quite fanciful description of his own. Further, where hints are given as to the selection of suitable shades of powder, lipstick and rouge, no attempt is, as a general rule, made to define or exemplify the meanings attached by manufacturers to such terms as "blonde," "titian," "medium brunette." In these respects the C. & D. chart gives valuable assistance. No new terms are introduced for the various shades, since to do this would be merely to "make confusion worse confounded." Instead, actual matching standards in their true colours are provided, by means of which the assistant at the counter can arrive at the nearest shade in any particular range of products. To simplify this operation still further, a tabular key facing the chart gives the names of the nearest equivalents in a dozen leading makers' series. In order to render quite unmistakable the meanings attached to the eight types of women dealt with, the latter are depicted in full natural colour. Therefore, though two persons might attach different interpretations to the terms "medium brunette" or "mouse brown," and so on, all doubt as to the meaning placed upon them in the present instance is eliminated by the illustrations.

Determination of Standards

Since wide differences of opinion exist amongst beauty specialists, it is evident that no hard-and-fast rules for make-up can be formulated. To those engaged in selling beauty products by retail, who have neither the time nor the opportunity to study the subject for themselves, some practical guidance on the subject will therefore be all the more welcome. In constructing the C. & D. Cosmetic Harmony Chart, it was decided to take into consideration only complexion colourings which might be taken as typical or representative. Combinations of dark skin with fair hair, for example, or of a "blonde" complexion with "brunette" hair, were omitted, in order to concentrate on the varieties which would be of the greatest utility to the average retailer. The services of a beauty expert were engaged to suggest harmonious colourings, and eight "standard types" were decided upon. The harmonies selected are such as can be relied upon to serve in all normal circumstances. It is not, of course, suggested that these are the only possible combinations. Many customers work out their own colour groupings, and manufacturers' recommendations will also be found to differ markedly, in some cases, from our own

suggestions. There is, and will remain, considerable latitude in these matters. As a standard of reference, however, the C. & D. Chart, applicable to every brand marketed, will need little recommendation to the retailer. It must be emphasised that the various shades against each figure are not to be taken as identical with one another, but as the nearest equivalent to the C. & D. standard. This equivalent will naturally be a closer match when the makers' range of shades is long than if it is limited to few colours.



The Chart in Use

How, in practice, to use THE CHEMIST AND DRUGGIST Cosmetic Harmony Chart will depend on which of a number of starting-points takes effect at the time of sale. Usually the customer at least wants confirmation of her shades of cosmetics; quite commonly she may know her correct face powder but be in ignorance of the best rouge or the most satisfactory lipstick colour. Another circumstance in which the Chart gives valuable assistance is when the customer is desirous of changing the brand of cosmetic. Makers' names vary so much that she might spend her money in vain if she bought by description only. Whatever the starting-point, two warnings are necessary. The powder and nail varnish colours present no difficulty. Each is shown as it appears in its container and as it appears in use, the two being identical. In the case of lipstick the same does not apply. A number of lipstick colours are considerably changed after application to the lips. It must be remembered that the C. & D. Chart is for dealers, not users. For this reason the shades illustrated are those of the sticks themselves. The colour on the face may be quite different. This accounts for the fact that some of the lipstick colours shown on the Chart appear to clash with those of the other cosmetics listed and to belie its title. The rouge colours also call for an explanation. Many makers supply two varieties: a "dry rouge" and a "cream rouge." In all cases where this alternative is offered, it is the "dry" variety that is illustrated. These points in mind, the Chart can be used by the salesman to full advantage. A new customer may be rapidly "identified" as one of the eight types, the shade-numbers looked up, and the colour-names read off under the name of the manufacturer most favoured. The customer for face powder may be offered correct shades in the three other items without hesitation, thus increasing the chances of a "companion sale" and creating a good impression in the customer's mind. Or, asked for his advice on any point connected with either daytime or evening make-up, the salesman can give it at once and authoritatively. After a little practice he can even make use of the Chart in advising customers who do not fall within one of its classifications. Thus, for a "medium blonde" whose skin is abnormally dark, reference to the columns for "medium blonde" and "medium brunette" will suggest a suitable modification of the usual recommendations. Another important advantage of the Chart is that it assists the shopkeeper to ensure that the suggestions given to customers by a number of assistants conform to a uniform standard. In this way, his shop can become known as an acknowledged centre for advice on all complexion difficulties.

"THE CHEMIST AND DRUGGIST" COSMETIC HARMONY CHART

	No. on Chit.	HARRIET HUBBAID AYER	BOURJOIS	BUTY TONE	COTY	MAX FACTOR	HOUBIGANT	ICILMA	MORNY	OUTDOOR GIRL	POMPEIAN	ROGER & GALLEY	YARDLEY
Pale Blonde	1	Blonde	Naturelle	Naturelle	Rach. Nac.	Flesh	Naturelle	Naturelle	Rose	Naturelle	Naturelle	Naturelle	Eng. Peach
	17	Titian	Rose Corail	Geranium	Invis. Nac.	Flame	No. 2	Naturelle	Argent	Orange	Light	2 (blonde)	Natural
	33	Pomegran.	Tourne-sol	Changeable	Invisible	Flame	Naturel	Tango	Tango	Naturelle	Light	No. 1	Natural
	49	Light	—	—	Rose Clair	—	—	—	Natural	Naturelle	—	—	Natural
	2	Peach	Ocrée 1	Peach	Ocre Rosée	Flesh	Naturelle	Peach	Rose	Naturelle	Naturelle	Naturelle	Natural
	18	Titian	Mandarine	Geranium	Egyptien	Flame	No. 3	Naturelle	Rose Carn.	Orange	Light	1 (blonde)	Natural
	34	Light	Clair	Flame	Vif	Vermilion	Coquelicot	Flame	Escarlata	Boulevard	Medium	No. 2	Vivid
	50	Cardinal	—	—	Rose Clair	—	—	—	Coral	Rose	—	—	Natural
Medium Blonde	3	Peach	Rose 1	Peach	Gitane	Rachelle	Rach. Sol.	Naturelle	Rose	Boulevard	Naturelle	Naturelle	Natural
	19	Titian	Rose Corail	Geranium	Persan	Flame	No. 3	Rosée	Carnaval	Orange	Light	2 (blonde)	Natural
	35	Light	Moyen	Medium	Moyen	Carmine	Cerise	Flame	Cerise	Boulevard	Medium	No. 3	Poppy
	51	Cardinal	—	—	Rose Moyen	—	—	—	Coral	Coral Pearl	—	—	Natural
	4	Peach	Ocrée 1	Peach	Ocre Rosée	Rachelle	Ocre Rosée	Peach	Rachel	Boulevard	Rachel	Solblonde	Med. Rach.
	20	Titian	Mandarine	Medium	Capucine	Flame	No. 3	Rosée	Carnaval	Orange	Light	1 (blonde)	Natural
	36	Titian	Etincelant	Flame	Capucine	Flame	Coquelicot	Flame	Coral	Miami	Light	No. 1	Vivid
	52	Tile	—	—	Rose Moyen	—	—	—	Coral	Coral	—	—	Poppy
Titian	5	Flesh	Rose 1	Rachel 1	Naturelle	Rachelle	Rachel	Rachel	Rachel	Rachel	Naturelle	Naturelle	Rachel 1
	21	Titian	Mandarine	Geranium	Egyptien	Flame	No. 3	Rosée	Argent	Orange	Light	1 (blonde)	Natural
	37	Light	Clair	Flame	Vif	Vermilion	Coquelicot	Flame	Escarlata	Boulevard	Medium	No. 2	Vivid
	53	Cardinal	—	—	Rose Moyen	—	—	—	Coral	Coral Pearl	—	—	Natural
	6	Peach	Ocrée 1	Peach	Ocre Rosée	Flesh	Naturelle	Peach	Rose	Naturelle	Naturelle	Naturelle	Natural
	22	Titian	Mandarine	Geranium	Persan	Flame	No. 3	Naturelle	Argent	Orange	Light	1 (blonde)	Natural
	38	Titian	Etincelant	Orange	Capucine	Flame	Coquelicot	Flame	Mandarine	Orange	Light	No. 2	Poppy
	54	Tile	—	—	Rose Moyen	—	—	—	Coral	Coral	—	—	Poppy
Auburn	7	Blonde	Naturelle	Naturelle	Rach. Nac.	Flesh	Naturelle	Naturelle	Rose	Naturelle	Naturelle	Naturelle	Eng. Peach
	23	Flame	Rose Corail	Medium	Ros. Incarn.	Flame	No. 4	Rosée	Carnaval	Scarlet	Light	3 (blonde)	Poppy
	39	Light	Clair	Raspberry	Vif	Carmine	Cerise	Flame	Electra	Miami	Medium	No. 4	Poppy
	55	Cardinal	—	—	Rose Moyen	—	—	—	Coral	Rose	—	—	Medium
	8	Peach	Rose 1	Peach	Gitane	Rachelle	Rach. Sol.	Naturelle	Rose	Boulevard	Naturelle	Naturelle	Natural
	24	Titian	Mandarine	Geranium	Persan	Flame	No. 3	Naturelle	Argent	Orange	Light	1 (blonde)	Natural
	40	Light	Clair	Raspberry	Vif	Flame	Coquelicot	Flame	Escarlata	Boulevard	Light	No. 4	Vivid
	56	Fr. Red	—	—	Rose Moyen	—	—	—	Rose	Coral Pearl	—	—	Medium
"Mouse" Brown	9	Peach	Ocrée 2	Apricot	Ocre Rosée	Naturelle	Ocre Rosée	Peach	Rach. Nat.	Lido Apric.	Naturelle	Solblonde	Rose Rach.
	25	Blush	Rose Corail	Medium	Invis. Nac.	Flame	No. 4	Crème	Argent	Orange	Light	2 (brune)	Poppy
	41	Medium	Moyen	Poppy Red	Moyen	Carmine	Cerise	Ruby	Cerise	Lido	Medium	No. 5	Cherry
	57	Shell	—	—	Invisible	—	—	—	Natural	Pearl	—	—	Natural
	10	Peach	Ocre Chair	Apricot	Rose Clair	Naturelle	Pêche	Peach	Rach. Nat.	Everglades	Honey Rose	Ocre Rosée	Deep Rach.
	26	Flame	Rose Corail	Geranium	R. d'Orient	Flame	No. 4	Rosée	Cerise	Cherry	Light	2 (blonde)	Poppy
	42	Light	Moyen	Medium	Moyen	Carmine	Cerise	Flame	Cerise	Boulevard	Medium	No. 3	Poppy
	58	Medium	—	—	Rose Clair	—	—	—	Natural	Rose	—	—	Natural
Brunette	11	Brunette	Ocrée 1	Rachel 2	Gitane	Brunette	Rach. Ros.	Brunette	Rach. Brun.	Everglades	Rachel	Rachel	Deep Rach.
	27	Medium	Roset. Brun.	Cerise	Ros. Pourp.	Raspberry	No. 9	Brunette	Brunette	Medium	Medium	3 (brune)	Cherry
	43	Medium	Foncée	Medium	Foncée	Crimson	Rubis	Rouge	Carmine	Everglades	Dark	No. 5	Medium
	59	Fr. Red	—	—	Rose Vif	—	—	—	Rose	Coral	—	—	Medium
Medium Brunette	12	Brunette	Ocrée 2	Rachel 2	Rach. Nac.	Rachelle	Rach. Sol.	Brunette	Rach. Fonc.	Riviera Tan	Rachel	Rachel	Deep Rach.
	28	Theatrical	Roset. Brun.	Cerise	Rose Renoir	Carmine	No. 9	Brunette	Cerise	Brunette	Medium	3 (brune)	Cherry
	44	Medium	Moyen	Poppy Red	Moyen	—	Cerise	Ruby	Cerise	Lido	Medium	No. 5	Cherry
	60	Cherry Red	—	—	Rouge	—	—	—	Carmine	Ruby	—	—	Poppy
Full Brunette	13	Fr. Rachel	Ocre Sol.	Rachel 2	Ocre	Olive	Rach. Ros.	Brunette	Rach. Brun.	Everglades	Honey Rose	Rachel	Deep Rach.
	29	Theatrical	Roset. Brun.	Cerise	R. d'Orient	Raspberry	No. 9	Rouge	Cerise	Raspberry	Dark	4 (brune)	Medium
	45	Medium	Moyen	Poppy Red	Vif	Carmine	Rubis	Wine	Escarlata	Boulevard	Medium	No. 5	Poppy
	61	Cherry Red	—	—	Rouge	—	—	—	Carmine	Ruby	—	—	Poppy
	14	Fr. Rachel	Oc. Foncée	Rachel 2	Ocre Ros.	Olive	Rach. Sol.	Brunette	Rach. Brun.	Riviera Tan	Honey Rose	Rach. Fonc.	Deep Rach.
	30	Theatrical	Roset. Brun.	Cerise	Ros. Incarn.	Raspberry	No. 9	Brunette	Cerise	Raspberry	Dark	4 (brune)	Medium
	46	Medium	Moyen	Medium	Moyen	Vermilion	Cerise	Flame	Electra	Boulevard	Dark	No. 6	Medium
	62	Cherry Red	—	—	Rouge	—	—	—	Carmine	Ruby	—	—	Medium
Grey	15	Blonde	Naturelle	Naturelle	Rach. Nac.	Flesh	Naturelle	Naturelle	Rose	Naturelle	Naturelle	Naturelle	Eng. Peach
	31	Blush	Rose Corail	Medium	Rose Franc	Blondeen	No. 2	Rosée	Brunette	Cherry	Light	3 (blonde)	Natural
	47	Light	Clair	Changeable	Vif	Flame	Coquelicot	Flame	Rumba	Miami	Light	No. 3	Natural
	63	Light	—	—	Rose Clair	—	—	—	Natural	Naturelle	—	—	Natural
	16	Peach	Rose 1	Peach	Gitane	Rachelle	Rach. Sol.	Naturelle	Rose	Boulevard	Naturelle	Naturelle	Natural
	32	Pomegran.	Rose Corail	Medium	Ros. Franc	Blondeen	No. 2	Rosée	Rose Carn.	Scarlet	Light	3 (blonde)	Natural
	48	Light	Clair	Changeable	Vif	Flame	Coquelicot	Flame	Escarlata	Boulevard	Light	No. 2	Natural
	64	Pomegran.	—	—	Rose Clair	—	—	—	Natural	Rose	—	—	Natural

"THE CHEMIST AND DRUGGIST" COSMETIC HARMONY CHART

		POWDER	ROUGE	LIPSTICK	NAIL VARNISH
Pale Blonde	DAY	1	17	33	49
	EVENING	2	18	34	50
Medium Blonde	DAY	3	19	35	51
	EVENING	4	20	36	52
Titan	DAY	5	21	37	53
	EVENING	6	22	38	54
Auburn	DAY	7	23	39	55
	EVENING	8	24	40	56
"Mouse" Brown	DAY	9	25	41	57
	EVENING	10	26	42	58
Medium Brunette	DAY	11	27	43	59
	EVENING	12	28	44	60
Full Brunette	DAY	13	29	45	61
	EVENING	14	30	46	62
Grey	DAY	15	31	47	63
	EVENING	16	32	48	64

TREATMENT of BURNS



Burns—first and second degrees



Treatment by application of Tannafax—black coagulum formed.

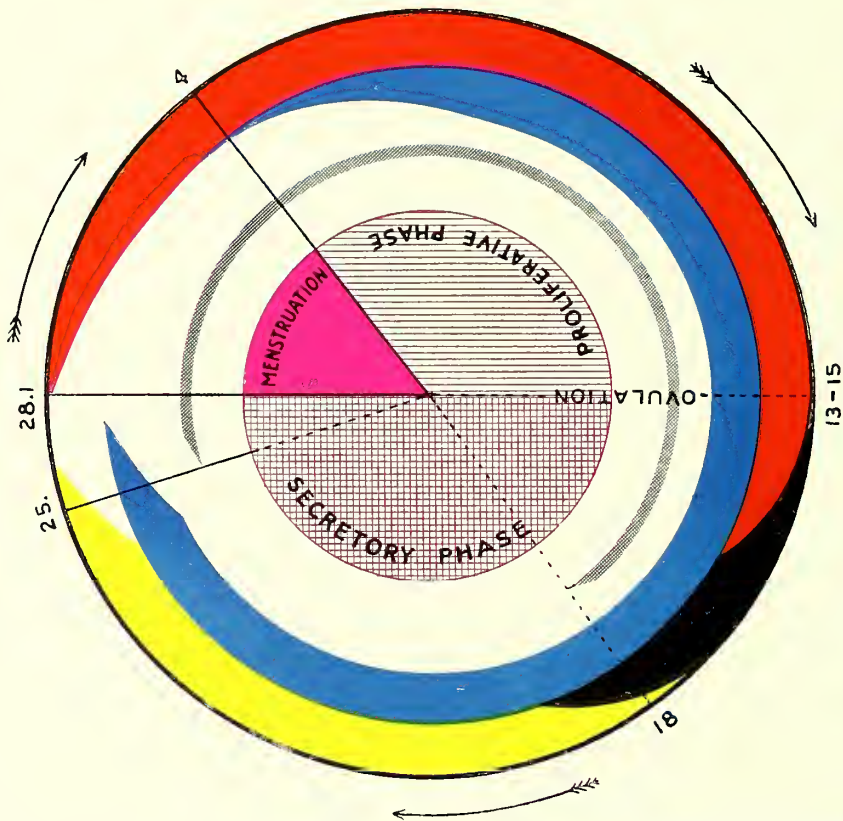


Coagulum removed—healthy new skin revealed

[Copyright. Burroughs Wellcome & Co. (The Wellcome Foundation, Ltd.)

HORMONE ACTION IN MENSTRUAL CYCLE

DIAGRAM ILLUSTRATING THE RÔLE AND APPROXIMATE PERIOD OF ACTION OF THE HORMONES IN A NORMAL MENSTRUAL CYCLE



Hormone	Gland of Origin	Therapeutic Equivalent	State of Uterus
Gonadotropic	Anterior Pituitary	GONAN	Menstruation
Luteinizing			Proliferation
Oestrin	Ovarian Follicles	OESTROFORM and OESTROFORM 'B'	Secretion
Progesterone	Corpora Lutea	PROGESTIN B.D.H.	Sensitivity to Posterior Pituitary Hormone

Numbers indicate approximate days of a normal menstrual cycle (vide pp. 7 and 8)

[Adapted from an illustration supplied by courtesy of The British Drug Houses, Ltd.



Modern Treatment of Burns

THE treatment of burns and scalds resolves itself into general measures to prevent shock, such as warm baths and the hypodermic injection of morphine; and local treatment to allay the pain and lessen the possibilities of shock and subsequent collapse. Cleansing the burnt area and preventing infection also come under the heading of local treatment. For many years carron oil was the universal remedy. Carron oil relieves pain by adhering to the

surface of the burn and preventing the access of air. Although excellent for this purpose, it fails to combat the ever-present danger of shock, arising from the formation of histamine-like products as the result of protein degradation. It may even provide a good culture medium for bacterial growth.

Picric acid dressing acts remarkably well in first and second degree burns, but is unsuitable for the treatment of large burns, owing to the danger of toxic effects resulting from its absorption.

Tannic Acid

In 1925 Davidson, a young American surgeon, introduced the tannic acid treatment of burns. This treatment is now generally adopted in modern medicine, owing to its superiority over any other method previously used. (The effect of tannic acid is shown on page 730.) Tannic acid precipitates the proteins in the injured tissue, resulting in the formation of a firm coagulum over the surface. Pain is relieved immediately, and there is little or no danger of secondary shock from absorption of breakdown products of protein from the burnt area. Further, it forms a slough which is greatly resistant to septic action. The dressing, in the form of a spray, consisting of a 2.5 or 5 per cent. solution of tannic acid in water, or as a compress or jelly of similar strength, should be repeated until the burnt surface has ceased to be moist and red, and has become hard and brown or black in colour. In making a compress or jelly, it is usual to add a small amount of antiseptic, such as acriflavine or 0.5 per cent. phenol, as preservative.

Tannic Acid Jelly

Tragac.	..	5.0
Hyd. perch.	..	1-1500
Acid tannic.	..	2.0-5.0
Glycerin.	..	3.0
Alcohol	..	1.0
Aq. dest.	..	to 100.0

If tragacanth No. 20 powder can be obtained it is easier to use—if not, the best white flakes, soak them in the water until they completely swell, then make a homogeneous jelly on a water bath. Dissolve the tannic acid in the alcohol, add the glycerin, and incorporate with the jelly. Add the perchloride. Instead of perchloride 0.5 per cent. of phenol may be used.

Among the advantages of a jelly are that it is easily applied to such parts as the eyes, ears and nose and that it need not be made extemporaneously.

Although it is preferable, in general, to leave the treated area exposed to the air, a light, loose bandage may if necessary be applied. Tannic acid treatment has the advantage that if subsequent removal becomes necessary it can be carried out without causing the pain usually associated with removal of oily and greasy preparations. Healing is usually complete in ten to fourteen days, and in the absence of further interference the formed black coagulum readily peels off, leaving

a clean, normal surface. As with picric acid, all blisters should be incised and dead epithelium removed before its application, because intact skin or even loosened epidermis is impermeable to tannic acid. Its rational use would appear, therefore, to be for burns of the more severe type, but in practice

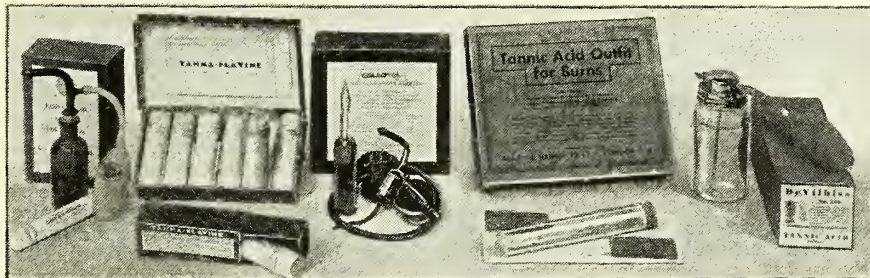
it is found that even superficial burns are greatly benefited, probably owing to its soothing effect. Some authorities consider that owing to the danger of destroying young and growing cells its use is contra-indicated in minor burns. This conclusion is logical, but in reality there appears to be no delay in healing and no untoward effects are apparent following its application. During treatment with tannic acid it is important to give plenty of fluid, by mouth, per rectum, or by the intravenous injection of saline. Very rarely cracking or softening of the coagulum or late blister may predispose to infection. In severe infection it becomes essential to remove the coagulum by cutting away the separated portions. Softening the coagulum is effected by the application of hypertonic saline dressings. Two or three per cent. sodium chloride solution is generally used for this purpose.

Other Treatments

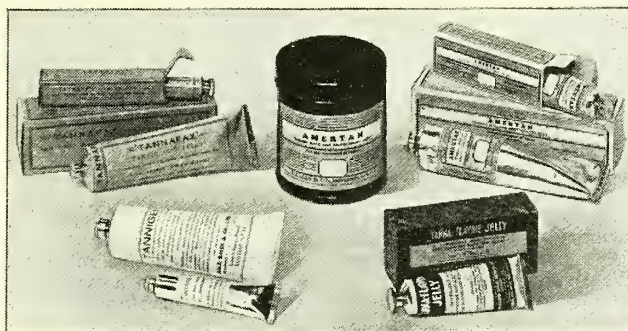
Zinc and boric ointments tend to promote healing. There is a danger, however, that the area will become gangrenous if old and rancid zinc ointment is used. The use of preparations containing benzocaine or ethyl para-amino-benzoate has been suggested with the idea of obtaining desensitisation of painful areas. The propyl ester has been found to be appreciably more effective in its action on epidermal tissue. A formula is as follows:—

Lanolin anhydrous	..	30
Olive oil	..	33
Spermaceti	..	10
Propyl-para-amino-benzoate	..	2
Water	..	25

Melt the fatty ingredients on a water bath and dissolve therein the propyl-para-amino-benzoate. Add the water last, previously warmed to approximately the temperature of the water bath. Add this water in divided portions with thorough agitation until completely incorporated. This preparation supplies every effect desired, anaesthesia, lubrication, nutrition, protection and even antiseptics, for the amino-benzoates are all mildly antiseptic.



Tannic Acid Atomisers and Outfits



Some Proprietary Tannic Acid Jellies



The Female Sex Hormones

THE four female sex hormones: œstrin, progestin, prol A and prol B, are concerned principally with the regulation of the ovarian cycle. The ovaries in most female mammals, including women, show cyclic activity, correlated with changes in the uterus and vagina. This activity is regulated by the anterior lobe of the pituitary gland. The ovaries consist of a stroma or framework, in the meshes of which are a number of vesicular (Graafian) follicles. These follicles increase in size after puberty, and a cavity is formed which is filled with fluid. Eventually the mature follicle ruptures and the ovum finds its way by means of the uterine (Fallopian) tube to the uterus. After discharge of the ovum, a series of changes occurs within the follicle, resulting in the formation in the ovary of a mass called the corpus luteum. It was known as early as 1903 that the corpus luteum controls the implantation of the ovum, but it was not until 1923 that Doisy isolated œstrin or "theelin," which is responsible for promoting the growth of the endometrium (lining membrane of the uterus). This substance also stimulates uterine contractions.

œstrin, the first ovarian follicular hormone, is formed in the whole substance of the ovary, including the Graafian follicles. In the lower animals it gives rise to the phenomenon of œstrus or "heat." In the human female it causes congestion, slight enlargement of the uterus and proliferation (reproduction) of the endometrium. A second ovarian hormone, known as progestin, is formed by the lutein cells of the corpus luteum. This hormone controls the pre-menstrual changes in the uterus, and stimulates the secretory activity of the lining membrane of the uterus. The pre-menstrual or, as they are sometimes called, the pre-gestational changes, prepare the uterus for the embedding and gestation of the fertilised ovum. It is now known that the anterior lobe of the pituitary gland produces several very important active principles, among them a hormone which acts on the thyroid gland, a second which causes increased rate of growth in mammals, and two others, known as the gonadotropic hormones. The last-named were found by Aschheim and Zondek, in 1928, in the urine of pregnant women. The gonadotropic hormones were named by these workers "prolan A" and "prolan B," although workers in Edinburgh described them as "rho-factors 1 and 2." One stimulates the ovary and brings about the development of the mature follicle and the formation of the lutein cells and stimulates secretion of œstrin. The other stimulates the function of lutein tissue to produce progestin. It is thus made clear that the interval condition of the menstrual cycle is brought about by œstrin, which is produced by the ovarian follicle in ovulation, i.e., the maturation and escape of ova, and which acts on the uterine endometrium. It is evident that the corpus luteum produces the pre-menstrual or pre-gestational phase in the endometrium and controls pregnancy. Further, both these secretions are dependent for their reproduction on prol A secreted by the anterior lobe of the pituitary body, which also causes the formation of the ripening follicles and ovulation and the subsequent formation of the corpus luteum.

After this explanation, it may be profitable to summarise the endocrine processes involved. In the first place, the gonadotropic hormones, prol A or rho 1, act, at the end of each menstrual period, upon the immature follicle and cause it to ripen. At the same time, the ovary secretes a hormone, œstrin, which stimulates the uterine musculature until about the fourteenth day, when the follicle ruptures, releasing the ovum. The second gonadotropic hormone from the anterior pituitary gland, prol B or rho 2, effects luteinization of the ruptured follicle, forming the corpus luteum. The corpus luteum itself secretes a hormone, progestin, which acts in association with œstrin to prepare the mucous membrane for embedding the ovum. Thus at least four hormones are concerned in the reproductive cycle, and a hormone is also secreted by the placenta. An explanatory diagram in colour appears on p. 730.

Variations in Hormone Content of Blood

From the end of one menstruation to just before the beginning of the next, it is believed that the œstrin content of the

blood increases steadily, and that its influence is modified during the latter half of the inter-menstrual period by the production of progestin from the corpus luteum. One or two days before menstruation begins, there is a sudden fall in the quantity of both hormones in the blood. In the absence of necessary stimulus from the ovum, and in consequence of the cessation of anterior pituitary action, the supply of prol B ceases, and consequently the corpus luteum begins to retrogress. Associated with the retrogression of the corpus luteum is a cessation of progestin secretion. There is simultaneously a sudden drop in the œstrin content of the blood, resulting in a breaking down of the endometrium of the uterus. The placenta or after-birth also appears to play an important part in the cycle of activity, as it appears to become either the manufactory or the storehouse of substances which are probably identical with the gonadotropic hormones of the anterior lobe of the pituitary. It appears to assume this function at the end of the first month of pregnancy, and these substances, prol A and prol B, are poured out into the blood in such excess that they are excreted in the urine. The recognition of the biological effects on immature female mice constitutes the well-known Aschheim-Zondek test for pregnancy. This test consists in injecting the morning urine of the patient, in doses from 0.2 to 0.4 c.c., into each of five immature female mice. After the test has been repeated six times the animals are killed five days later, and the presence of blood spots in the enlarged ovaries constitutes a positive reaction.

Preparation of the Hormones

During recent years most of these hormones have been prepared synthetically or recovered in large quantity from pregnancy urine. In addition to its use in the diagnosis of pregnancy, the urine may also be of value in the diagnosis of other pelvic conditions, in pituitary tumours and disorders. Further, promising results have followed by administration of anterior pituitary substances in cases of amenorrhœa, and, to a less extent, of menorrhagia. Other uterine disorders are similarly expected to respond to this anterior pituitary therapy, but it should be borne in mind that the pituitary acts upon the ovaries and through them on the uterus and vagina; and so it would appear pointless to administer anterior pituitary to a woman whose ovaries, either by disease or senility, are beyond stimulation or development or whose ovaries have been removed. œstrin may now be obtained in crystalline form, and its activity is measured in mouse or rat units. A mouse unit (M.U.) is the quantity needed to produce œstrus in 50 per cent. of a population of castrated mice. Although the initial discovery is of fairly recent date, œstrin has already been found also in yeast, many of the higher plants, and in the bile and urine, not only of women but also of men. The outstanding difficulty in its clinical use is to administer an adequate quantity, as the chief source of œstrin is, of course, the urine of pregnant women.

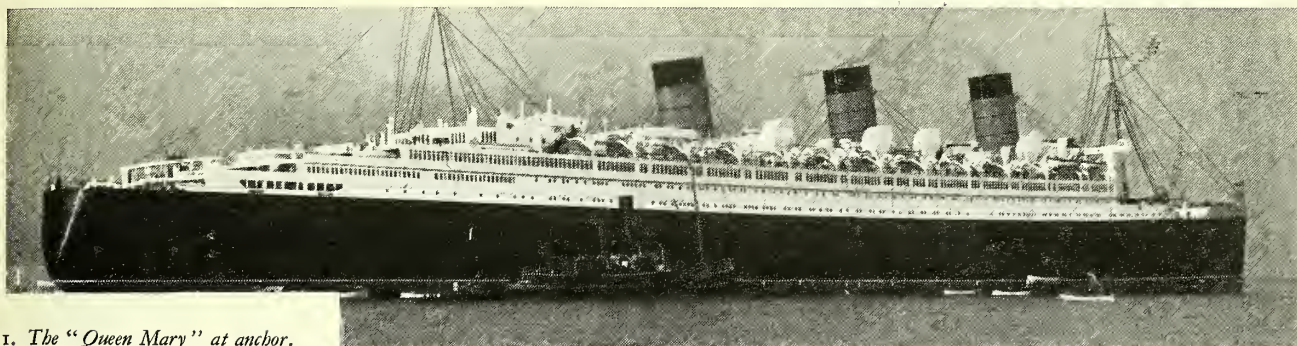
Clinical Applications

œstrin may be of exceptional clinical importance. It appears to have a powerful action in relieving symptoms of artificial or spontaneous menopause and to play a part in the regulation of menstrual disorders. Though this hormone has a more limited sphere of action than the gonadotropic hormone, nevertheless there is a large number of clinical reports which record favourable results following its administration. Progestin also has its clinical uses. Experimentally it has been found that an inadequate supply of this corpus luteum hormone was a common cause of repeated abortion. For this reason, its principal application would appear to be in habitual or threatened abortion. Progestin has been isolated and is available as an oily solution of a mixture of the two active hormones, α -progestin and β -progestin. It may be administered by intramuscular injection.

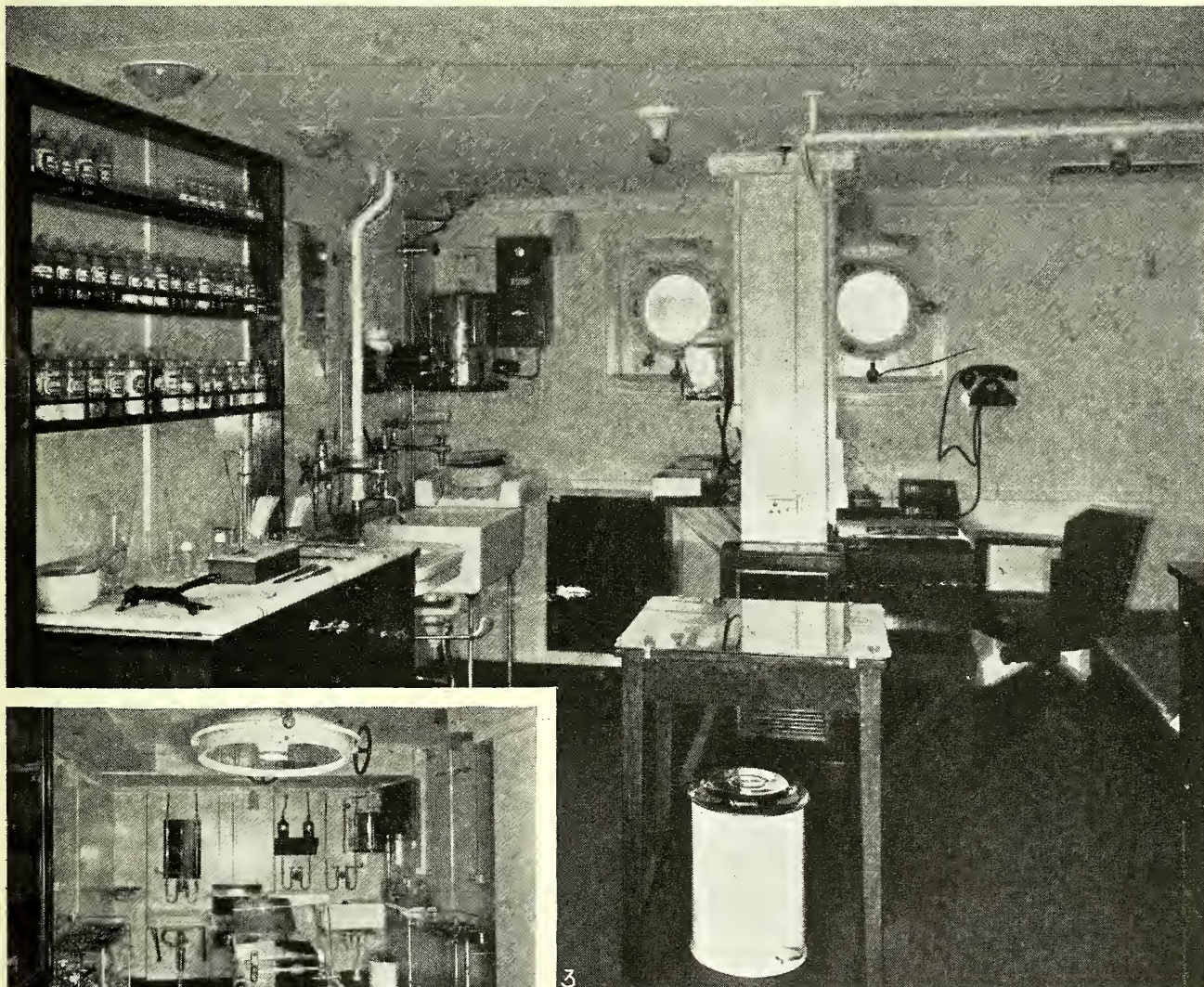
HEALTH SERVICES AND APPOINTMENTS ON THE ATLANTIC

R.M.S. "QUEEN MARY"

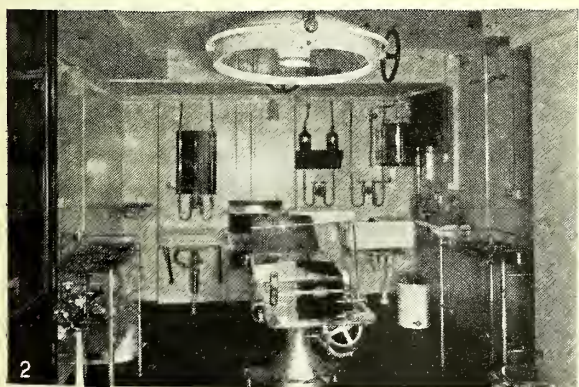
(Cunard-White Star Line)



1. The "Queen Mary" at anchor.



3



2

[Photos]

[Stewart Bale

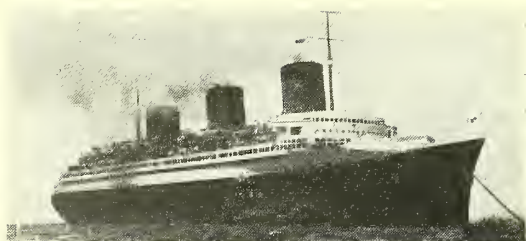
2. The operating theatre.

3. The cabin dispensary.

HEALTH SERVICES AND APPOINTMENTS ON THE ATLANTIC

S.S. "NORMANDIE"

(French Line)



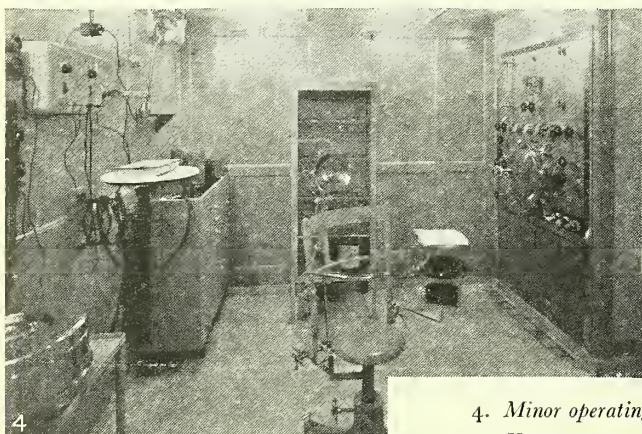
1. The "Normandie" at anchor



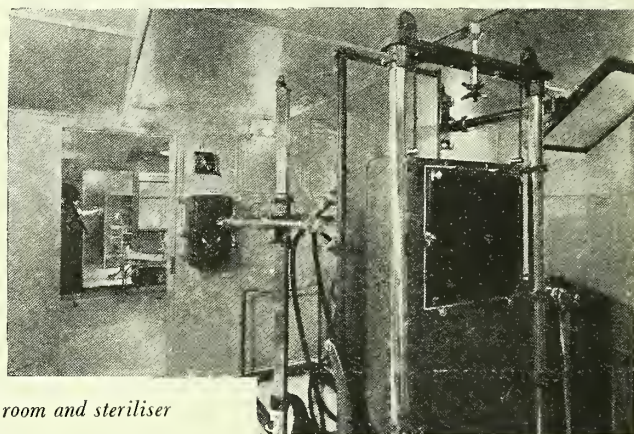
2. Laboratory and dispensary



3. A nurse at the door of the women's ward



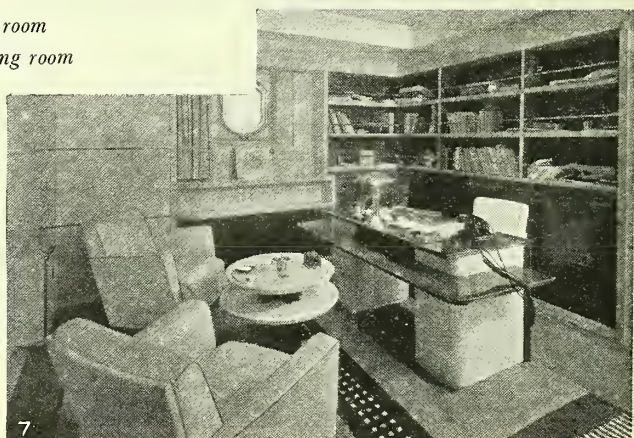
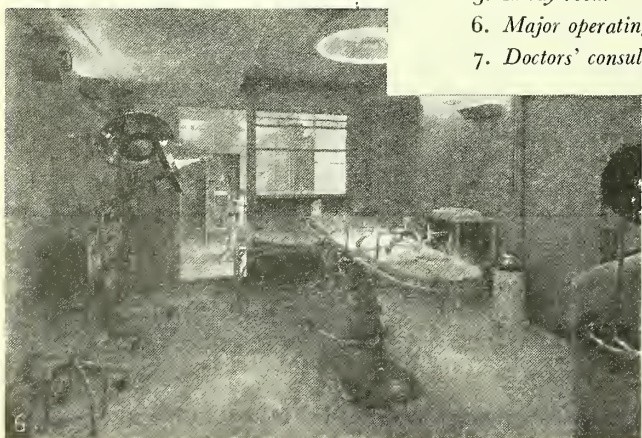
4. Minor operating room and steriliser



5. X-ray room

6. Major operating room

7. Doctors' consulting room



HEALTH SERVICES AND APPOINTMENTS ON THE ATLANTIC

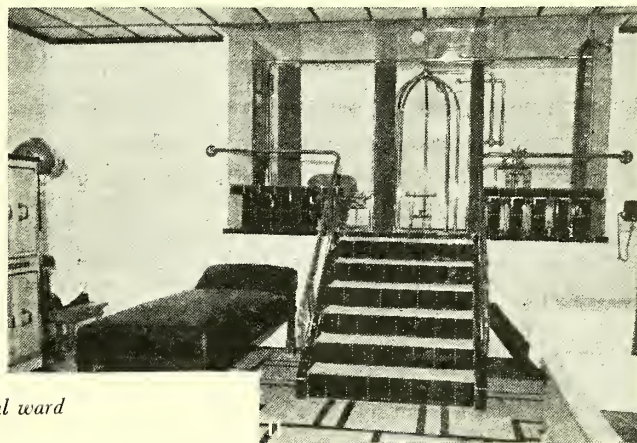
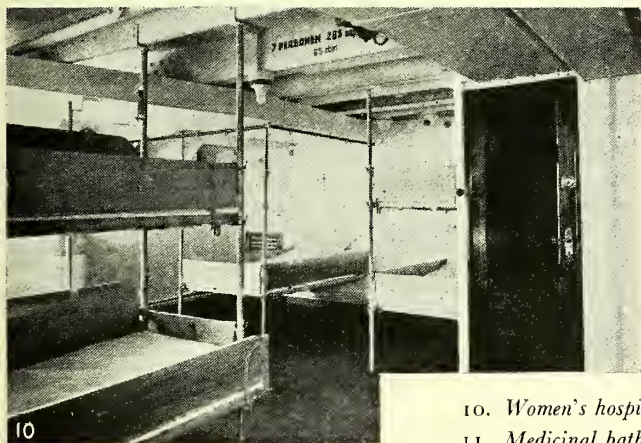
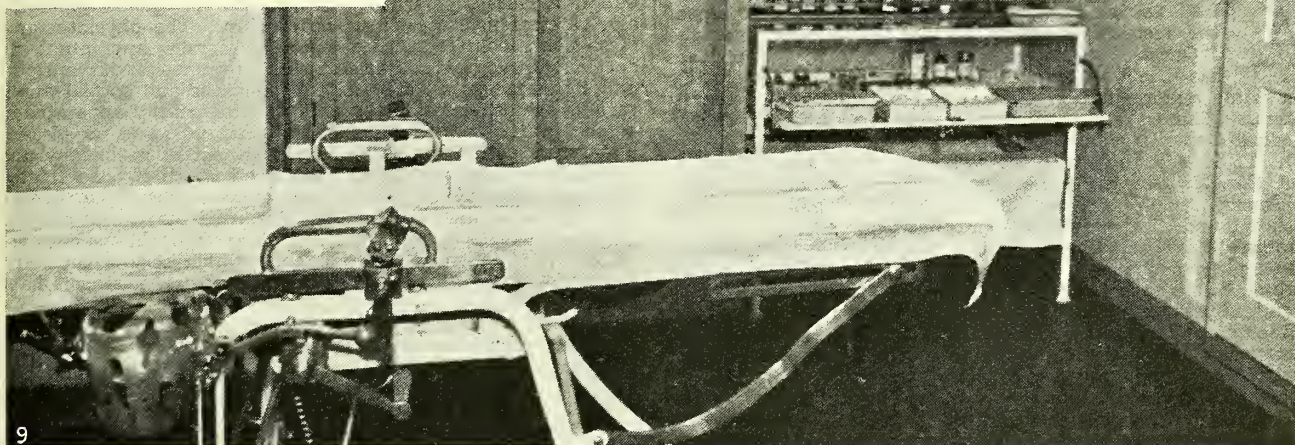
S.S. "BREMEN"

(North German Lloyd Line)



8. The "Bremen" at sea

9. Operating table attached to the hospital

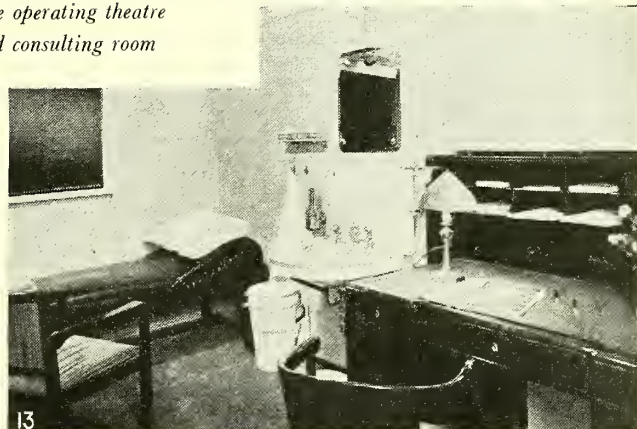
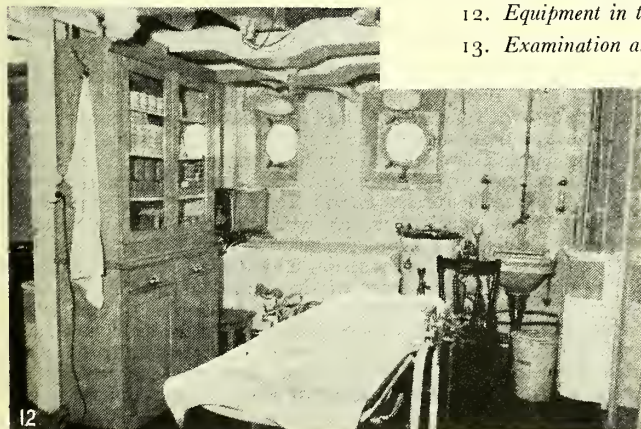


10. Women's hospital ward

11. Medicinal baths

12. Equipment in the operating theatre

13. Examination and consulting room





Pharmacy Afloat

How the "Ocean Greyhounds" of Britain, France and Germany are equipped to safeguard the health of passengers to and from America

The "Queen Mary"

Described by Mr. Martin Daniels, Managing Director of Rexall, Ltd., who was a passenger on her maiden voyage.

A VISIT to the medical and pharmaceutical quarters of the recently launched Cunard-White Star liner the "Queen Mary" demonstrates at once that no expense has been spared in equipping the ship to justify her name and reputation as a veritable "queen" of luxury liners. Planned and equipped under the direction of the Medical Superintendent, Cunard-White Star, Ltd., Liverpool (Dr. T. G. Maitland), with the assistance of the Chief Pharmacist (Mr. E. Hardisty), the accommodation includes a model pharmacy replete with an imposing array of pharmacy jars, "shop rounds," dispensing apparatus and an authentic "poison cupboard." A full library of reference works includes several naval pharmacopœias in addition to the B.P., the Codex and Squire. The equipment includes a B.T.-H. electric refrigerator; a full selection of serums from the Evans Biological Institute, Runcorn, and from Burroughs Wellcome & Co., London; an electrical steriliser; and oxygen cylinders. Operating theatre requisites, fittings for the electrical treatment room, dental chair and such equipment are by C. F. Thackray, Leeds. The physician and principal medical officer is Dr. G. A. Goolden; the surgeon is Mr. E. C. Butler, F.R.C.S.; and the dispensary staff consists of Mr. F. H. James and Mr. L. L. King. Two qualified nurses are also numbered among the medical staff. The importance of the dispensary on every Atlantic liner is proved by the fact that within an hour of the vessel's sailing on May 27 the services of the dispenser were called upon to dispense a prescription. Thereafter there was little idle time.

From information supplied by the owners

The hospitals, operating theatre and dispensary are situated amidships, in a self-contained section, on the port side, D deck. The whole of the surrounding bulkheads are lined with sound-proof insulation, and the ship's side is also covered with the latest approved insulation against excessive radiation from direct exposure to the sun's rays. The female wards are situated on the one side of the dispensary, the two male wards on the other. Each bed is provided with showerproof draw curtains, its own call bell, lock-up pedestal cupboard, electric bed and reading lamp; every ward has its own bathroom and bath, toilet, and sanitary washing appliances. The ventilating and heating system is independent of general ship ventilation.

The operating theatre is situated directly opposite the dispensary and general hospitals. It is fitted with the latest universal model pedestal operating table, illuminated by a 35-in. diameter shadowless operating lamp connected to the ship's main supply and to an emergency supply, which automatically comes into operation should the main supply fail.

The isolation hospitals, situated at the after-end of B deck, consist of one male ward and one female ward each fitted with five beds. The wards are equipped on lines similar to those of the general hospital, but with the addition of special facilities for the treatment of infectious cases. A complete x-ray plant of the portable shockproof type is carried, together with "Intertherm" diathermy apparatus. There are also installations for the emissions of ultra-violet rays, infra-red rays and radiant heat.

The "Normandie"

THE medical service of the "Normandie" comprises a general hospital divided into three independent sections: a medical-surgical clinic, a hospital for the crew, and a hospital for the passengers. The medical-surgical clinic comprises operating

theatre, physiotherapeutic ward, sterilising ward, room for the dressing of injuries, dental installation, and radiology ward, the whole forming a block situated on C deck, port side forward. Operating theatre and sterilising ward were fitted out by a Paris firm, which also supplied the special apparatus and surgical instruments on board ship. The physiotherapeutic equipment includes a short-wave diathermic apparatus; an actinic shower (a movable lamp of 20 amperes with reflector and localiser, permitting artificial sunbaths and special applications of ultra-violet rays); and an infra-red-ray apparatus of 13,000 watts. The radiological ward possesses a Massiot apparatus, permitting the full employment of radioscopy and radiography. In this clinic there is an isolation ward treated with germ-destroying paint. The cabins of the clinic, five on the port side and six on the starboard side, can also be transformed into isolation cabins if necessary. At the entrance to the clinic there is a small shop which sells French and foreign pharmaceutical specialities. First-class passengers have direct access to it from their accommodation.

Forward of the clinic, but separated from it by a large passage, is the crew's hospital, which includes a sick ward, a pharmacy, a radiographic and bacteriological laboratory, and two wards containing respectively twelve and two beds. To starboard are the passengers' wards, containing respectively seventeen beds for men and twelve for women; two isolation wards, of four and three beds each; one observation cabin; and two padded cabins for mentally deranged persons. The whole of this hospital accommodation is entirely self-contained, without any passage common to other parts of the ship. Its installation conforms to the latest French regulations concerning hygiene on board ship and safety in navigation, as well as the regulations of the United States and the Board of Trade in force at the time of the putting into commission of the ship. A further sick ward annexe has been installed on D deck, at the point where the tourist and third-class passenger accommodation meets; this has an operating theatre, a room for the dressing of injuries, a small pharmacy, an observation room and a doctor's consulting room. The medical service is controlled by a chief surgeon, who has his consulting room on B deck. He is assisted by two colleagues, one occupying the sick ward annexe of the tourist class and the other the principal hospital. There are also two nurses and five orderlies or hospital attendants.

The "Bremen"

THE hospital accommodation on the Norddeutscher Lloyd express steamer "Bremen" comprises seven rooms, with a total of thirty-one beds, made up as follows:—Male ward, ten beds; female ward, ten beds; crew, six beds; isolation rooms, two each, male and female. Auxiliary rooms include operating theatre, dispensary, two examination rooms and two waiting rooms. All rooms are equipped in up-to-date style and in accordance with the regulations in force; hospital accommodation on board is, in fact, in excess of that stipulated by legal requirements. There are two qualified doctors, who have at their disposal a "red cross" nurse and two female hospital assistants with State qualifications. In the dispensary on board are all the latest medical specialities, as well as remedies and articles stipulated by law. All medicines are supplied gratis to passengers as a matter of course. The dispensaries are supplied by the medical department of the Norddeutscher Lloyd Company. The operating theatre is fitted up with all the instruments required for major operations; with an autoclave; and with a large steriliser for instruments. There are also on board two masseurs and a masseuse, so that where necessary use may be made of steam, hot air or electric baths, massage and radiant heat.

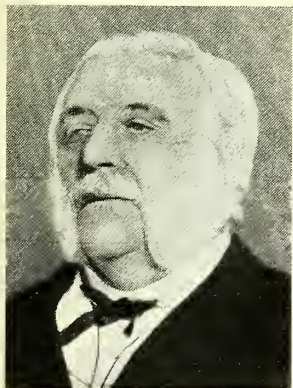


Pharmacy's "Offspring"

STORIES of some famous businesses that grew out of, and away from, the retail trading activities of CHEMISTS AND DRUGGISTS

IT was Sir Joseph Swan, himself a pharmacist, who declared: "I do not know any form of industry that embodies so many various interests [as pharmacy]. The well-educated pharmacist (and it seems as if we were in a fair way soon to have no other than the well-educated pharmacist) must be a man of science, and he must also be a man of business; he must possess a wide range of both special and general knowledge." The truth of this view is convincingly demonstrated in the histories of a number of famous businesses, not themselves pharmaceutical, which owe their foundation and success to that mingling of theory and craftsmanship which is inseparable from a pharmaceutical apprenticeship and training. In the succeeding paragraphs are related the stories of enterprises so widely separated as soap powder and electric lamps; as Christmas crackers and surgical catgut; all of which were "germinated" in a dispensary, nurtured behind a chemist's counter, and became separated from the "parent" only upon reaching maturity.

Egg-less Custard



Mr. Alfred Bird,
Chemist and Druggist

Apprenticed to Philip Harris, Birmingham, Alfred Bird, originator of Bird's Custard, qualified as a chemist and druggist and in 1837 opened his own pharmacy in Bell Street, Birmingham, close to the Market Hall. From his father, an astronomer, whose portrait is to be seen in the British Museum, and from his grandfather, an astronomical instrument-maker, who achieved some fame in the eighteenth century as the inventor of a new method of marking divisions in a circle, he inherited an interest in scientific subjects which showed itself in various ways. Thus, in 1858, he gave a series of lectures on electro-magnetism to a Birmingham

audience, a printed syllabus of which is preserved, while a reprint is extant of "An Account of the Water Barometer constructed and erected by Alfred Bird, Experimental Chemist" (he was a Fellow of the Chemical Society) which appeared in the Philosophical Magazine for 1865. In the first instance his business was largely confined to purely scientific channels, and the invention of custard powder was the outcome of experiments

prepared with eggs, or to eat bread prepared with yeast, the only raising agent at that time available. He aimed to discover substitutes for eggs and yeast that should be equally wholesome and nutritious. His first invention was that of baking powder, interesting sidelights on which are to be seen in advertisements and newspaper paragraphs of the period, two cuttings from

and at Spithead po. a magnificent salute. ships in harbor.

BREAD WITHOUT YEAST FOR THE ARMY.—Before the recent changes in the Administration, Mr. Alfred Bird, chemist, Birmingham, communicated with the Duke of Newcastle, as head of the War Department, offering to supply the troops in the East with his baking and fermenting powder, which would admit of their being regularly supplied with fresh bread, as well as prove invaluable in the hospitals for the supply of the sick and wounded with bread, light cakes, light puddings, and other articles of food suited to their condition. His Grace, in reply, desired that a loaf made with the fermenting powder should be sent to him, and requested that the loaf might be made in the presence of the authorities in Birmingham, from whom a certificate was to be sent stating that the bread was made without yeast. The Mayor was accordingly applied to, and witnessed the making of fourteen pounds, or one peck of flour, with the powder and a little salt, into five loaves, the operation requiring not more than four minutes and a half. After being baked they were found to weigh 20 lbs. 2 ozs. One of the loaves was stamped with the corporate seal, and forwarded to the Duke of Newcastle, together with a certificate from the Mayor of Birmingham as to the mode of its production; and another from Dr. Evans, to the effect that he had on several occasions partaken of bread made with Mr. Bird's powder, and that the bread was light and good; the doctor, moreover, expressing his belief that the powder was a good substitute for yeast. In due course his Grace acknowledged the receipt of the bread, which he pronounced to be sweet and good; and, in order that the powder might receive a further trial, desired Mr. Bird to communicate with the Lords of the Admiralty, who supply the Army from the victualling yards. Their Lordships replied by requesting that a loaf, as a specimen of the bread, might be sent to them; on receipt of which they admitted the bread to be wholesome, sweet, and palatable. The result is that Mr. Bird has received a communication from Lord Panmure, the present Minister of War, announcing that the Government intend to give the fermenting powder a thorough trial at the camp of instruction at Aldershot, with a view to its introduction into the Army and military hospitals abroad.

THE LATE ZAK.—In the course of these memorable conversations with...

From the "Illustrated London News," April 24, 1855

which are reproduced. This discovery was shortly followed by the invention of custard powder. In the view of the inventor the great merit of the new preparation lay in its dispensing with eggs; and it was this singular advantage which was specially emphasised in all advertisements at the time. The invention brought relief to the delicate digestion of the patient, and it was soon found that many others enjoyed the same benefit. The success of Alfred Bird's custard powder in the limited circle of the inventor's acquaintances was so pronounced that the inventor forthwith began its manufacture on a commercial scale. At a later period he was joined in his enterprise by his two sons, the company becoming known as "Alfred Bird & Sons." Advertising on a large scale began sixty years ago, and has continued uninterruptedly ever since, always on an increasing scale. As a consequence, Bird's Custard is to-day universally accepted as a wholesome and nutritious food. The pharmacy at Bell Street gave place at a later date to another at Worcester Street, Birmingham. Following the death of the founder in the year 1878, the business passed under the management of the late Sir Alfred Bird, Bt., M.P., who subsequently became the sole proprietor; it was floated as a public company in the year 1900. Under his energetic and capable direction the business expanded rapidly, a process maintained during the régime—some thirty years—of the present chairman, Sir Robert Bird, Bt., M.P. The whole area at Deritend, Birmingham, is to-day occupied by the works and the administrative buildings of the company. As time passed, the manufacture of food products tended more and more to overshadow that of pharmaceutical and toilet preparations, until finally the latter were entirely discontinued and to-day only "edibles" are manufactured by the company.

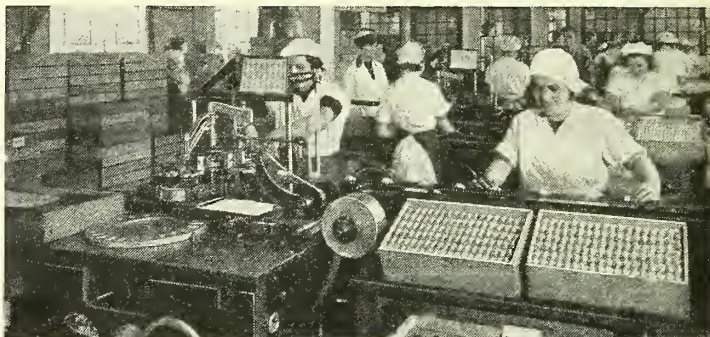
BIRD'S BAKING and FERMENTING

POWDER, for Making the Finest Bread without Barm.—In answer to innumerable inquiries, the Public is informed that this valuable preparation can now be had, wholesale and retail, at Messrs. Fortnum and Mason's Italian Warehouse, Piccadilly, London; at Messrs. Petty and Wood's, Grocers, King-William-street, City, London; and from the Inventor and Sole Maker, ALFRED BIRD, Experimental Chemist, Worcester-street, Birmingham.

FROM THE "ILLUSTRATED LONDON NEWS," MARCH 21, 1855

From the "Illustrated London News," March 21, 1855

carried out in the year 1844. His experiments in the first instance were undertaken for the benefit of his wife, who suffered from a delicate digestion and was quite unable to assimilate dishes

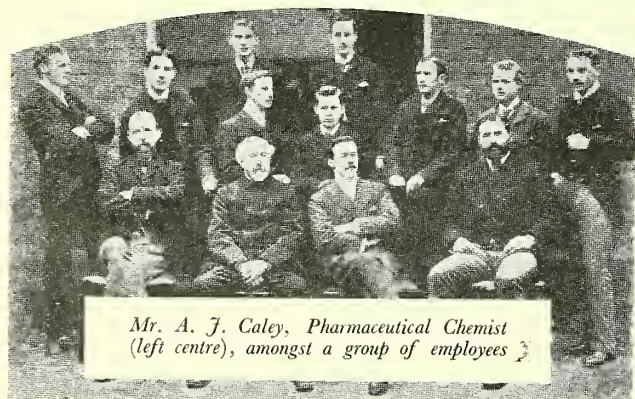


In the Norwich factory of A. J. Caley & Son, Ltd. Left, Cracker Making. Right, Foiling Chocolates

Chocolates and Crackers

The well-known chocolate, cracker and mineral water business of Caley's had its beginning in the manufacture of mineral waters in a small room at the back of a chemist's shop in London Street, Norwich, in 1863. Mr. A. J. Caley, Ph.C., the founder, had partnered Mr. Octavius Corder, Ph.C., at this address until he began the making of ginger beer and soda water on his own account. The venture made rapid headway, and in 1880 he had to remove his new undertaking to more adequate premises, securing a vacant factory at Chapel Field. Good water was essential, and as the city supply was not considered suitable a well was dug through clay and chalk to a depth of 100 feet; an artesian bore reached down 209 feet lower still until a good yield was found; then pumps were installed. After twelve months' pumping to clear away all impurities, analysis proved the water superior to any found in the district. The same well supplies the mineral water department of Caley's to-day. The products of the new factory were first marketed in May, 1880, and it is stated that the present manager of the department, who recently completed fifty-five years' service, tested some of the initial bottlings of lemonade after the lapse of twenty-five years and found them still in good condition. In the early days the chief speciality was ginger beer, but a good trade was also done in the production of medicated waters for doctors and chemists—a side of the business which was lost through changing conditions in pharmacy. The permanent staff consisted of one day-book clerk, one ledger clerk and a manager-representative. Mr. A. J. Caley and his only son, Mr. E. J. Caley, F.C.S., attended to all the correspondence and management. The working hours of those days were eight a.m. to seven p.m., six

finishing when the work was done—perhaps as late as ten or eleven p.m.—but never after midnight on Saturdays. No work except attention to the steam boiler was ever permitted on Sundays. More than once Mr. Caley himself came and drew the taps of the ginger beer vats at 11.55 on Saturday night, so that work should not be continued on Sunday. Although the hours were long and the work strenuous at times, there were slack periods, when employees were set to work in the garden and vinery. As the business grew, an increasing number of men and boys was required for the summer months only, and it became a matter of deep concern to Mr. Caley that he was unable to offer any work to most of them during the winter. After much consideration it was decided in 1883 to start the manufacture of cocoa, it being thought that as this was a winter drink it would help to provide continuous employment for the workers. The cocoa manufacture of England seemed to be in the hands of the "Quakers," but Mr. Caley, who belonged to the Plymouth Brethren, claimed that a "Brother" could surely succeed as well as a "Friend." For the purposes of cocoa manufacture one bay of the factory was isolated and sub-divided into roasting and nibbing rooms, mills, manufacture and packing departments. The introduction of the new product was made at the Norfolk and Norwich Fat Cattle Show, three varieties being shown: "prepared," a sweetened powder, and two varieties of cocoa essence. The venture succeeded and additional representatives were sent out. The first experimental making of chocolates was begun in 1886. A Frenchman, Monsieur Olgard, who had been chocolatier to the French royal family, was engaged. Up to this time only men and boys had been employed, but with the advent of chocolate girls were brought in and taught by Monsieur Olgard. The employment of girls proceeded slowly, as it was felt by the founder that if the work could be done by boys they should have precedence. On the retirement of Mr. A. J. Caley in 1894, his nephew, Mr. Frederick W. Caley, came into the business. In 1897 cracker-making was introduced, in 1898 the firm was registered as a company under its present title of A. J. Caley & Sons, Ltd., and in 1918 the business was purchased by the African & Eastern Trade Corporation and three spacious new factories were added. John Mackintosh & Sons, Ltd., acquired the concern in July 1932.



Mr. A. J. Caley, Pharmaceutical Chemist (left centre), amongst a group of employees

days a week, even boys under eighteen years starting their half-day only at four o'clock on Saturday afternoon. The works were open every day except Sundays, Christmas Day and Good Friday, and it was customary to work on Bank Holidays. The summer staff was larger, and worked longer hours, the working day beginning at four or five a.m. and

Fruit Salt

On the occasion of the death of Mr. James Crossley Eno, chemist and druggist, in 1915, at the age of eighty-seven, a somewhat lengthy obituary notice appeared in *THE CHEMIST AND DRUGGIST*, in which was quoted the remark of an advertising expert: "Various theories are advanced to account for the success of Eno, no one of which is entirely satisfactory." Mr. Eno had purchased a pharmacy in the Groat Market, Newcastle, in the late 'fifties, and in the space of a few years had made "Eno's Fruit Salt" a household word in many countries. So far as there can be said to be any rules of good advertising Mr. Eno contravened them all. His unbounded faith in the article which he marketed, added to the accident of his association with the important seaport of Newcastle-upon-Tyne at the height of its prosperity, were certainly important factors in his success.



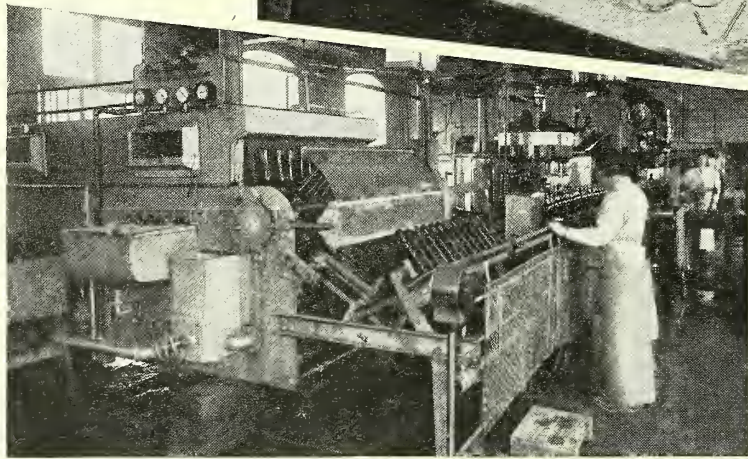
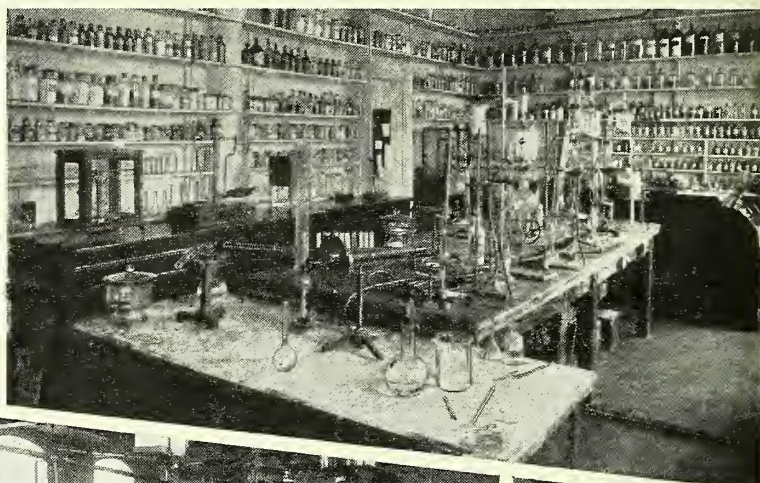
acting under Section 9 of the Trade Marks Act, 1905, accepted registration of the words "Fruit Salt" as a trade mark, and in 1920 the word "Eno" was separately registered.



Dry Soap Powder

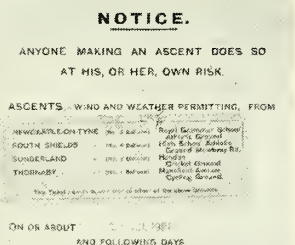
Amongst the many component companies which form the important Unilever organisation not the least is R. S. Hudson, Ltd. In 1837, Mr. R. S. Hudson, chemist and druggist, its founder, was conducting a small retail business in West Bromwich. He was impressed with the opportunity which then existed for marketing soap in the convenient form of a powder and, profiting by his skill with the pestle and mortar, prepared an eminently satisfactory product which he commenced to sell. Business developed slowly, if surely, and for many years he himself made and packed the powder. Seventeen years later, records show that he was employing ten girls as packers, the work being still entirely carried out by hand. A year later four more girls had been taken on. By novel methods of publicity the fame of the business began to spread more widely. By 1875, not only was there a large factory at West Bromwich, but an additional and much

larger factory was erected at Bank Hall, Liverpool, whither the head offices were transferred. Machine packing methods replaced manual labour to a large extent, though, of course, they had by no means ousted it so completely as at the present time. The founder of the business died in 1884 and, after a period during which it was held in trust for his children, Mr. R. W. Hudson became its proprietor until 1908, when it was sold to Lever Brothers, Ltd. It has been mentioned that novel publicity methods had been used by the proprietors. Two of these are worthy of mention. About the turn of the century, balloon flights were very much in the news. Mr. Hudson engaged "war balloons" (facsimiles of those in use in the Boer War, but bearing the words "Hudson's Soap" in giant letters) and offered complimentary tickets for flights. One of the original



At the Camden Town works of Idris, Ltd.

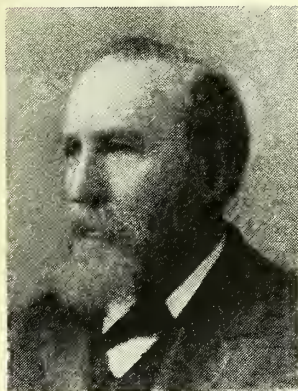
Top, The laboratory. Centre, Section of the main factory. Below, left, Idris delivery wagons; right, Part of the fresh fruit department



Facsimile balloon flight ticket

tickets is shown here. Still earlier, in the 'eighties, the Hudson's coach made a spectacular journey twice a week between Liverpool and York. This was the subject of a long illustrated article in a "Yorkshireman" summer number of the time, and one of the pen drawings which appeared is reproduced as a matter of interest. Subsequent to the acquisition of the business by Lever Bros., Ltd., considerable progress has been made in scientific methods of soap manufacture. Thus, though Hudson's Soap still sells in enormous quantities, a soap powdered by spraying from an atomiser has been introduced under the name "Rinso," which might justifiably be described as a "lineal descendant" of Hudson's Dry Soap Powder.

Mineral Waters



Mr. T. H. W. Idris,
Chemist and Druggist

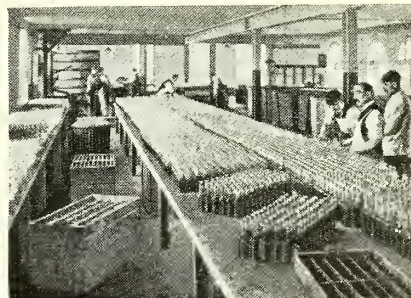
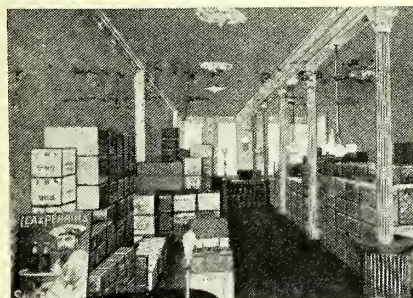
interest in scientific subjects. After periods as dispenser with a doctor, assistant with Herrings & Co., chemists, Aldersgate Street, London, and partner in a veterinary and chemist's business at Brynmawr, he returned to Herrings &

The business of Idris, Ltd., was commenced by a pharmacist; secured its early outlets among pharmacists; and owed much to the vocational training of its founder. Mr. Thomas Howell Williams, who took the name Idris by deed poll in 1893, was the son of a Welsh farmer who spoke no English. After only four years' schooling, during which he had learnt English, the boy was apprenticed to his uncle, a Monmouth draper, but left to take up a more congenial apprenticeship with a cousin who was a chemist in Ebbw Vale. This lasted four years, after which he spent five years with another chemist cousin in Crickhowell, by whom he was inspired with a profound

Co. as head of the chemical department. While in this position he passed his "minor" and took a course under Doctor H. E. Armstrong at the City College of Chemistry. In 1871, four years after qualifying, he purchased his own business in Seven Sisters Road, London, N. Here he was fortunate enough to impress an influential local doctor with his analytical skill, with the result that he secured the custom of a number of other medical men and established a firm foundation for his fortunes. An additional business in Wales and a share of another in London were acquired, but the strain was heavy, and he was ordered a Continental holiday to avoid a breakdown in health. Out of the accident of this apparent misfortune his new business was born, for while in Paris he noticed and examined a new type of mineral water syphon for which he foresaw great possibilities in London. A large supply of these Paris syphons was ordered, a mineral-water making plant was set up, and in 1873 he commenced manufacture. Advertisements contrasted his syphons with the existing English leaden-headed type, and won widespread appreciation for their hygienic value. Successive removals were made to Tollington Park, Hampstead, Kentish Town and Camden Town, each time to larger premises. The Camden Town site, which remains the headquarters, covers an area of over three acres, with departments for syphon manufacture and mineral-water making, with engineering shops and stores. Branches are situated in other parts of London, in Liverpool, Southampton, Bournemouth, Margate, Eastbourne, Chelmsford and Camberley. In 1893 the business was constituted a limited company with a capital of £300,000. This, it will be remembered, was the year in which Mr. Williams adopted Idris as his surname. It is a matter of interest that the lakes and river on the Cader Idris Estate, the waterfalls on the slopes of Cader Idris and the famous Welsh mountain itself are the property of the company. The success of his mineral-water business did not lessen Mr. Idris's interest in pharmacy. In 1904 he was president of the British Pharmaceutical Conference, of the London Chemists' Association and the Public Dispensers' Association. He also took a great interest in public affairs, being for many years chairman of the water and main drainage committees of the London County Council, a justice of the peace, mayor of St. Pancras, and for some time a member of Parliament. Mr. Thomas H. W. Idris died on February 10, 1925, at the age of eighty-two, but the business continues to flourish. New times have introduced different tastes, but the company has kept pace with them, among recent developments being the manufacture of "soft" fruit drinks. Illustrations given in these pages are eloquent of the present size and scope of the business.

Worcestershire Sauce

The name Lea & Perrins to-day suggests at once to most people Worcestershire Sauce. In the early nineteenth century it was well known in West-country pharmaceutical circles but had not at that time achieved a world-wide fame. The original partnership was formed at Worcester in 1828, after Mr. William Perrins, one of the principals, and great-grandfather of the present generation, had dissolved an earlier partnership with his brother at Evesham. There was also a Lea and Perrins' shop in Kidderminster and partnerships: Lea, Perrins & Burrows, in Malvern; and Lea, Perrins & Owen



Lea & Perrins, Ltd. Left, Saleroom and offices. Centre, Exterior of works. Right, Bottling Room



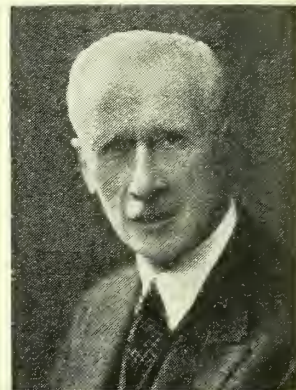
in Cheltenham. About the middle of last century the partnership of Lea & Perrins in Worcester was largely interested in shipping drugs to overseas markets, but during the 1850's this side of the business appears to have been discontinued, probably owing to the development of the sale of Lea & Perrins' sauce. The precise date at which Worcestershire Sauce first appeared upon the market is not known, because nearly all the early records were destroyed in the removal of the factory in 1896. It is believed, however, that it was first made about one hundred years ago. Certainly a letter from India, dated 1843, is in existence which makes reference to the sauce. The original recipe, which cannot with any certainty be stated still to exist, was probably brought to England by Lord Marcus Sandys, sometime Governor of Bengal. It was based upon a traditional flavouring essence used by Hindu cooks in India. The recipe was handed in at Lea & Perrins, chemists, Worcester, to be made up. Early notes which still survive show that a good many experiments were made before the present improved recipe was adopted. In 1896 a move was made to the factory in which Lea & Perrins' Worcestershire Sauce is still manufactured. In 1929 the business was amalgamated with that of H.P. Sauce, Ltd., one grandson and two great-grandsons of the original partner, Mr. William Perrins, joining the boards. Subsequently, two subsidiary companies—Lea & Perrins, Inc., New York, and Lea & Perrins (Australia), Ltd., Sydney, New South Wales, were formed. The company holds the Royal warrant.

Catgut

The manufacture of sterilised surgical catgut from lamb casings had its origin on a manufacturing scale in this country when Mr. G. F. Merson, Ph.C., immediately after the outbreak of the Great War, commenced, at the instigation of several well-known surgeons, the business which is now carried on at St.

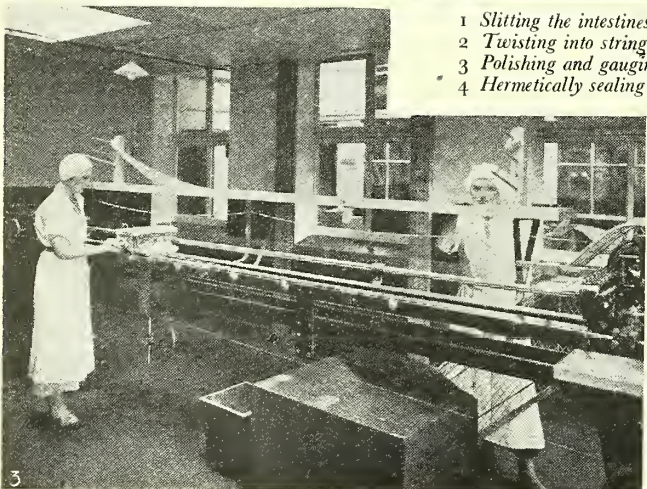
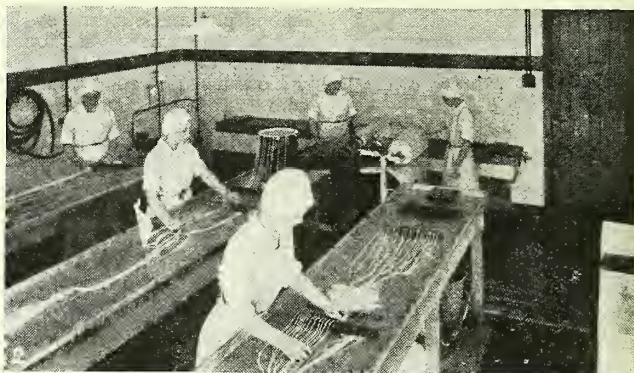
John's Hill Works, Edinburgh. No practical details were available, as the bulk of surgical catgut in use prior to August 1914

was of German manufacture. Manipulative details, mechanical and technical, had to be worked out experimentally. In this respect a sound pharmaceutical training and experience proved invaluable. So soon as a marketable product was available, home hospitals gave cordial support and expressed satisfaction with this Scottish product. As much was taken by the War Office as the factory could produce. Surgeons in the field and in war hospitals thus had opportunity to test the quality thoroughly, and having liked it under war conditions, they continued to ask for it after their return to civil practice. Through similar channels a footing was gained

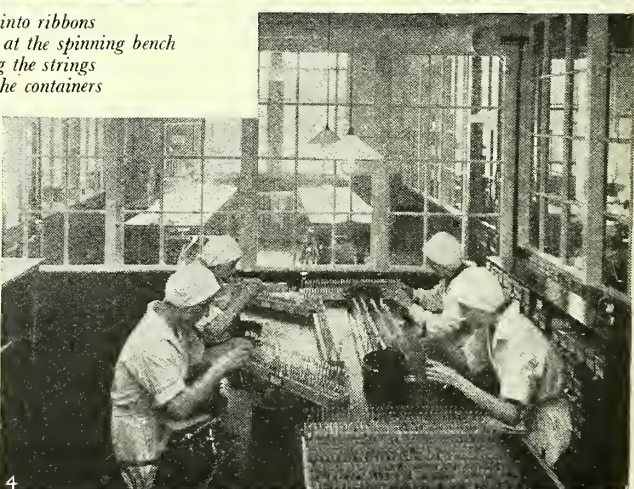


Mr. G. F. Merson,
Pharmaceutical Chemist

in the Dominions. Sales rapidly expanded, until to-day the company has accredited agents carrying stocks in all the Dominions besides having valuable connexions in many foreign countries. The importance of this overseas business may be gauged by the fact that the founder has on two occasions during the past ten years circled the globe in his company's interests. The production of surgical ligatures and sutures is the company's sole business, and not a "side-line." Manufacture is controlled by the Department of Health for Scotland, under whose licence the St. John's Hill factory operates. Bacteriological



- 1 Slitting the intestines into ribbons
- 2 Twisting into strings at the spinning bench
- 3 Polishing and gauging the strings
- 4 Hermetically sealing the containers





work, an all-important feature, is continuous throughout every stage of production from raw material to the finished certified article. Chemical, physical, mechanical and bacteriological problems are of everyday occurrence, so the importance of a sound training in pharmacy will be readily realised. Vacancies in the technical control and production departments are invariably filled by men who are University science graduates, but it is *sine qua non* that they must also possess the Major diploma of the Pharmaceutical Society. That meticulous accuracy, resourcefulness and initiative which are acquired during a training in pharmacy are given scope at every stage of this interesting offshoot of pharmacy. A large staff of girl workers is employed, and even in the earlier stages of the process the utmost attention is given to asepsis and antisepsis. In the later stages—sterilisation and final packing—workers are clothed as for work in the operating theatre of a hospital. Sterilised overalls, caps, face-masks, rubber gloves, etc., are worn; and work is carried out in an atmosphere of bacteria-free, filtered air. All process water is passed through sterilising filters and even alcohol, usually (but erroneously) considered sterile, has to pass through a Berkefeld "battery."

Fine Chemicals

Mr. Thomas Newborn Robert Morson was a chemist and druggist to whom chemistry was not only a hobby, but an absorbing interest. While the manufacturing business which he founded in 1821 was not, strictly speaking, pharmaceutical, yet he remained, in outlook and interests, a pharmacist, and was twice president of the Pharmaceutical Society. Mr. Morson was born at Stratford, London, E., educated at Stoke Newington and apprenticed at Fleet Market in the City of London (now Farringdon Street). His apprenticeship

LIST

OF

New Chemical Preparations,

Employed as Medicines.

Sulph : Quinine	...	40s. per oz.
Morphia	...	18s. per dram.
Acetate of Morphia	...	18s. per do.
Sulphate of Morphia	...	18s. per do.
Iodine	...	7s. per oz.
Hydriodate of Potass	...	9s. per do.
Strichnine	...	25s. per dram.
Emetine	...	10s. per do.
Brucine	...	30s. per do.
Veratrine	...	30s. per do.
Gentianine	...	20s. per do.
Lupuline.		
Tr. of Lupuline.		
Tr. of Croton Tiglium.		
Oil of Croton Tiglium.		
Alcoholic Ext. of Nux Vomica.		
Extr. of Opium, deprived of Narcotine.		

T. MORSON.

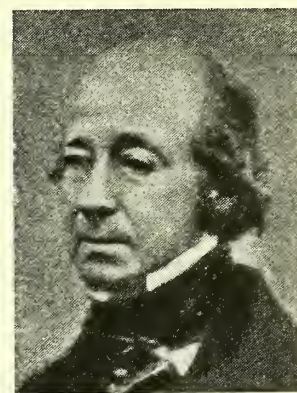
65, Fleet Market, 1822.

An early list of Morson's chemical products

was served with an apothecary, but his inclinations were strongly towards the pharmaceutical rather than the medical side of the business. His interest in chemistry led him to associate with men of similar tastes, and a society was formed in the neighbourhood of Fleet Street for the investigation of scientific subjects, at which he made the acquaintance of Faraday and formed the determination to apply himself to "pure"

chemistry. After his apprenticeship he served some years in a Paris pharmacy before returning to London to take over the chemist and druggist section of his former employer's business. The first quinine sulphate and the first morphia produced in England were made in a room at the back of his shop. A removal was made to Southampton Row and shortly afterwards a manufacturing laboratory was opened at Hornsey, where creosote, morphia and other chemicals were prepared. Mr. Morson was among the founder-members of the Pharmaceutical Society, and a personal friend of Mr. Jacob Bell. For many years he was a member of Council and an examiner.

Vice-president in 1844, he was president from 1845-48 and again in 1859-60. He had a European reputation as a manufacturing chemist and numbered many distinguished scientists among his friends.

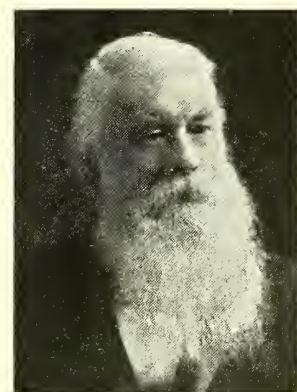


Mr. T. N. R. Morson,
Pharmaceutical Chemist

Electric Lamps, Photographic Plates and Process Blocks

Sir Joseph Wilson Swan, M.A., D.Sc., F.R.S., chemist and druggist, was a man who combined in exceptional degree the theoretical scientific knowledge and practical manipulative skill which may justly be looked upon as the main outcome of a training in pharmacy. He was apprenticed to a chemist and druggist in Sunderland, afterwards going as improver to Mr. Mawson, a Newcastle chemist, whose partner he later became. In his own words, he had been "snuffing up, inhaling and swallowing considerable quantities of those useful but unpleasant substances [aloes, gamboge and scammony] for eight months before the Pharmaceutical Society obtained its charter."

Before he finally severed his connexion with the chemist's counter he had been forty years in pharmacy. Even then he did not allow his interest in pharmacy to disappear on account of his scientific researches. Over twenty years later, after he had been president of the Society of Chemical Industry, president of the Institution of Electrical Engineers, first president of the Faraday Society, had been honoured in France with the Chevaliership of the Legion d'Honneur and in England with knighthood, he delivered the opening speech at the 1903 session of the Pharmaceutical Society's School of Pharmacy. The scientific discoveries of Sir Joseph Swan included the carbon process of photographic printing (now known as autotype); photographic dry plates; numerous improvements in photo-mechanical printing and in electro-metallic deposition; incandescent electric lamps and miners' electric safety lamps. He was co-inventor of a photographic reproduction process known as Woodburytype. He took an active part in the commercial development of a number of these inventions and his name is perpetuated in the Edison Swan Electric Co., Ltd., and in the Swan Electric Engraving Co., Ltd. The career of Sir Joseph Swan was described at some length in THE CHEMIST AND DRUGGIST of July 27, 1901.



Photo]

[Elliott & Fry

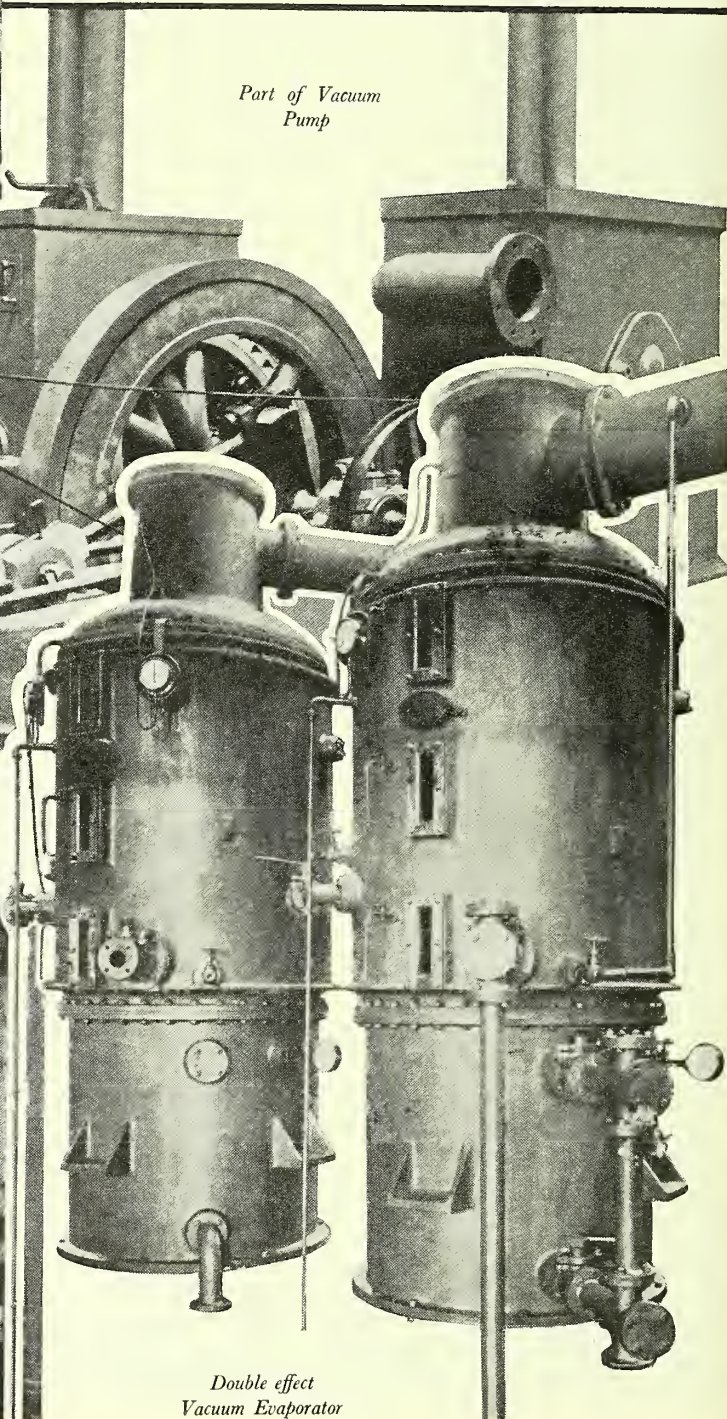
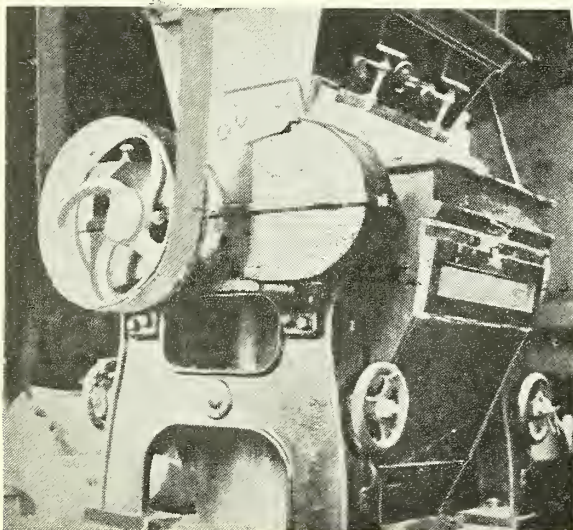
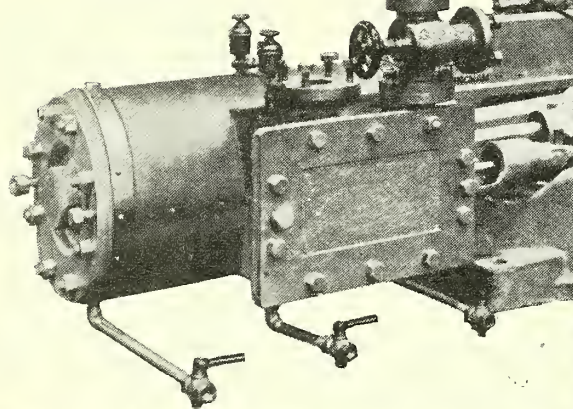
Sir Joseph Swan,
Chemist and Druggist

How Malt Extract is Made



Above, A corner of the Testing Laboratory

Below, Roller-type Grinding Mill



Part of Vacuum Pump

Double effect Vacuum Evaporator



How MALT EXTRACT is Made



A SPECIFICATION for extractum malti appears in the 1932 British Pharmacopœia for the first time, although it has had a place in the British Pharmaceutical Codex for many years. The B.P. fixes a definite specific gravity (1.40 to 1.42), a refractive index value of 1.4892 to 1.4976, and nitrogen equivalent to not less than 4.5 per cent. of protein. How, then, does a manufacturer set about to make his product comply with the requirements of the B.P.? His first choice, of course, must be the selection of the barley if he does his own malting, or the malted barley if not. It is quite possible to get several qualities of barley from the same field. In the first place, the barley may have had ideal weather conditions up to the time of cutting, indeed, until a portion has been carted safely to stack; if however, a few days' rain intervenes the balance will probably be sufficiently damaged to result in a second-grade barley. Before the field can be fully carted to safety, rainy conditions with a warm, sultry and damp atmosphere will so affect the grain as to cause some or all of it to sprout and go musty, when, of course, it is useless for malting purposes. Between the best and the worst of the above are always many other qualities, caused by the growing conditions, such as amount of rainfall, lack of sun, and so forth. In choosing a malted barley for malt extract purposes it is necessary to purchase one that is absolutely free from mould spores and broken corns. The manufacturing heats are at no time sufficiently high to destroy all mould spores.

Grinding

Having chosen a sound malted barley, the next consideration is the grinding of it. Up-to-date malt mills have four or more rollers, fluted or plain, or a pair of each. The first rollers break up the grain so that the husk is left as near whole as possible. It is immediately separated, the husk and fine material going straight to the grist case, whilst the remainder passes through other rollers to be reduced to the required fineness and falls into or is conveyed to the grist case. A grist case is a wood or metal container sufficiently large to hold the ground malt until it is required for mashing. Care is necessary in grinding, as, generally speaking, the finer a malt is ground the better the yield of extract, particularly with steely or badly modified malt. On the other hand, a tender, friable malt grinds very easily, and even if coarsely ground yields up its soluble contents more perfectly than inferior material. For convenience malt is generally ground the day before it is to be used, as ground malt, or grist as it is called, absorbs moisture with extreme avidity. The next part of the process is to mix the ground malt with water, and this process is termed "mashing." Since heat, quantity of water used, and time allowed to stand vary the constituent parts of the finished product, probably every manufacturer in the country has his own idea with regard to temperature of the striking heat, the length of time the mash is allowed to rest, and the quantity

of water used per quarter of malt m a s h e d . The method of mixing the grist and water is to pass both water and grist through a machine called an external masher or mashing

machine. This apparatus is attached to the bottom of the grist chamber and also connected to the hot water tank. It is made of metal, is cylindrical in shape, fitted horizontally and has a shaft running through the centre which is fitted with spindles for mixing, and also with propellers. It is situated on the top of the mash tun. The last-mentioned is a large cylindrical vessel made of either wood, copper or iron. At a distance of $1\frac{1}{2}$ in. to 2 in. above the real bottom of the mash tun is a false metal bottom, constructed in sections for easy removal, and known as "plates." These plates fit very closely together, but are perforated with fine holes or slots which allow the liquid to pass through but keep back the husk. A mash tun is also fitted with rakes, sometimes termed an internal mashing machine. When the wheels are set in motion the revolving rakes stir up the mash. Near the top of the mash tun is fitted a sparger, usually made of copper, and consisting of two, three or four arms extending from the centre to the side. These copper pipes are perforated on one side with fine holes, and the escaping water on this side pushes the sparge arms round. The work of the sparge is to deliver water in the form of a fine rain or spray on the top of the mash.

Mashing

When the striking heat has been decided upon, and the water in the water tank has been brought to the correct temperature, the water tap and the grist case slide are opened gradually. The water and grist are mixed and a thermometer on the masher shows the temperature, which is adjusted by opening or closing the hot water tap or sluice valve. The grist and water, now termed the "mash," after being thoroughly mixed is propelled forward and falls into the mash tun. When the whole of the mash is down the temperature in the mash tun is checked, the covers closed and the mash allowed to rest the predetermined length of time, whilst the diastasic and other enzymic action converts the malt starch into maltose, malto-dextrins and dextrins according to the length of rest, the quantity of water and the temperature. Fitted into the real bottom of the mash tun are a series of copper pipes, which are also connected to the hot water tank, to enable the liquor or wort to be run off. Immediately the "taps are set" the



sparge should be started, which, as already stated, discharges hot water in the form of a spray on top of the "mash." This water actually washes the spent grain and enables every trace of malt sugars to be washed down into the underbeck. While the above description is of a simple mash it does not at all follow that there are no other ways of arriving at the same result, or other ways of mashing to obtain a different product.

Prepared in Vacuo

Malt extract labels in nearly every case inform us that this product is prepared "in vacuo." The exact meaning of this phrase is that the thin wort is deprived of surplus water in the vacuum plant until a specific gravity of 1.4 is reached. The normal boiling point of water is 212° F. This boiling point is lowered in direct ratio with the reduction of atmospheric pressure. Thus with a vacuum showing 29 inches on the vacuum gauge the boiling point would be 79° F. Two objects are achieved by boiling in a vacuum, the first being speed and reduction of evaporating costs, the second and more important being the preservation of diastasic enzymes and the vitamin B content. Text books state that diastase is killed at a temperature greater than 140° F., and it is certainly impaired at a much lower figure. Vacuum plants are now fitted so that steam is shut off automatically at any fixed temperature should the heat of the wort rise by more than a few degrees. The plant is connected to the underbeck by pipes controlled of course by valves or cocks. The wort left in the underbeck is passed up these pipes by suction into the evaporating plant. The pump is started, and water on one side is drawn into the condenser and on the other the air is gradually exhausted from the plant. Gradually the vacuum rises and at about 20 inches the valve to the underbeck is opened. The wort then flows from the beck to the vacuum pan and when at the working level, which is observed through glass slots, steam is turned on; the liquor or wort begins to boil and the water of evaporation is replaced by wort from the underbeck until it is empty. A test for specific gravity is then made, and on the result of this the chemist in charge is able to make a rough calculation as to how many minutes will be required to get the extract to a specific gravity of 1.4. When the desired viscosity is reached, the pump is stopped, vacuum released and the plant is ready for emptying. Two samples are now taken, one for record and one for the laboratory. On receipt of the chemist's report that the extract is up to the standard required by the B.P. it is passed on to the mixing department and cod-liver oil is mixed into 15 per cent. volume for volume or in many cases to higher percentage for special purposes. A further test in the laboratory to check the required percentage of oil and that batch is marked O.K. for filling into jars or despatching in bulk.

Other uses for Malt Extract

Malt extract prepared specially with a view to its diastasic power or Lintner value is used in brewing, also textile, laundry and bakery trades and biscuit manufacture. The brewery trade are large users of malt extract, which varies in its diastasic power from 100 degrees upwards. It is used mostly in those seasons when bad weather and growing conditions have given a barley which when malted does not produce the friable grain so liked by the trade, but instead produces a malt that cannot be properly modified. The hard ends of the grain which are termed steely, are rendered more soluble by the action of the highly diastasic malt extract. Many brewers also use a specially prepared malt extract as a yeast food which is added to the fermenting becks.

For use in the textile trade high diastasic extract is again used. In the weaving trade all cotton cloths have had a coating of starch in one form or another to lay the nap and thus help the weaving. Before bleaching this starch must be removed, hence the cloth is run through a diastasic malt extract solution at a given temperature. In the ordinary course of events the cloth, now in the form of a rope, is allowed to stand at least twelve hours. This gives ample time for the diastase to act on the starch, which is converted into a soluble substance and is thus easily washed out by the washing machines.

In the bleaching and dyeing trades goods are often returned because of wrong finish or perhaps the shade of the colour is

not exact. All these goods contain a proportion of starch which must be entirely removed before the cloth can be re-finished or re-dyed. The same method is applied to dissolve the starch, which is afterwards washed out. As the starch is used as a method of making filling materials such as china clay, mineral white, etc., adhere to the cotton fibres, when the starch has been rendered soluble all the filling material is also readily washed out.

Malt extract is also used in the preparation of soluble starch. Starch when gelatinised makes a stiff paste. If a diastasic malt extract is added, the stiff gelatin-like condition disappears and the solution can then penetrate the fibre of the cotton to give an improved finish to the cloth.

In laundry work, malt extract is used in much the same way as in the textile trade, the object being to expel all starch before the shirts, blouses, collars, etc., can be restarched and finished. The diastasic action on starch is again taken advantage of and the now soluble starch easily washed out of the goods.

In the bakery trade several diastasic strengths of malt extract are used in bread baking, depending upon the ideas of the baker himself as to what constitutes the best loaf for his particular district or clientele. In making white bread the baker uses it as such and depends upon its diastasic action on the wheat starch, not only to give him more actual food units in his loaf, but also bread of better flavour, a nutty odour and altogether a loaf of better and bolder appearance and colour. For brown or malt bread a darker coloured extract is used generally devoid of diastase, the object being to make a more palatable loaf with the desired malt flavour.

Advertising Vitamins

THE Council of the American Medical Association has released for publication (Journal of the Association, 106, 20, 1732) four rulings sanctioning the advertising of preparations containing vitamins A and D to the public on certain conditions. The text of the rulings is as follows:—

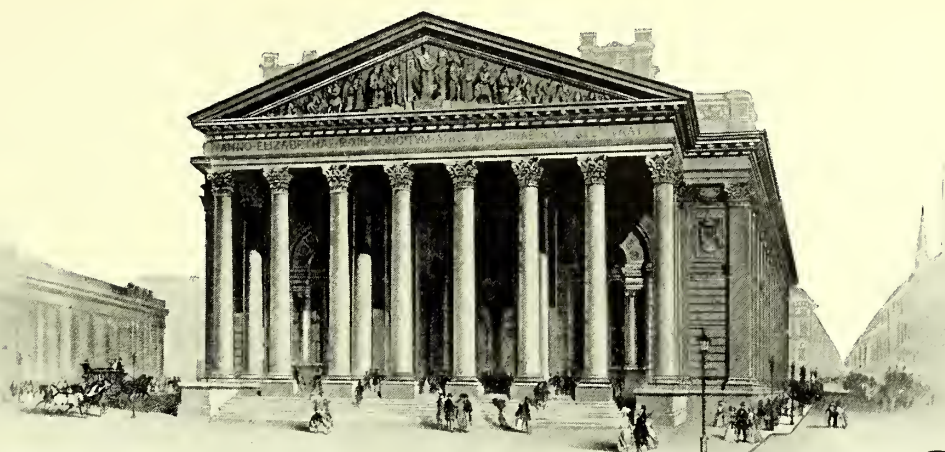
(1) Cod-liver oil and preparations made by the addition of therapeutically indifferent substances to the untreated oil, such as emulsions and malt preparations, may be advertised to the public if the prescribed daily dose provides at least 6,250 units of vitamin A and 625 units of vitamin D. Those are the numbers of units provided by two teaspoonfuls of cod-liver oil complying with the N.N.R. standard.

(2) Preparations of vitamins A and D other than those included under (1) may be advertised to the public if the prescribed daily dose provides not more than 10,000 units of vitamin A and not more than 1,000 units of vitamin D.

(3) Preparations of vitamin A which do not contain a therapeutically significant quantity of vitamin D and for which no recommendations for vitamin D are made may be advertised to the public if the prescribed daily dose provides not more than 10,000 units of vitamin A.

(4) Preparations of vitamin D which do not contain therapeutically significant quantities of vitamin A and make no representations for vitamin A may be advertised to the public if the prescribed daily dose provides not more than 1,000 units of vitamin D.

These rulings are followed by a record of various negotiations with manufacturers and others interested. One section relates to requests that the Council should sanction the addition of hydroquinone to cod-liver oil and halibut-liver oil as a preservative. The Co-operative Committee on Vitamins considered evidence, and came to the conclusion that the firms had failed to demonstrate that, under ordinary conditions of use, the oxidation which halibut-liver oil undergoes is serious. The Committee pointed out that it is as important to know whether or not the product formed by oxidation of hydroquinone is injurious as it is to know whether hydroquinone itself is injurious. Another request referred to the addition of carbon dioxide to cod-liver oil. The Committee felt that there had not been adduced evidence to warrant a statement that carbon dioxide under ordinary conditions of usage remains dissolved in fish liver oil for a sufficient length of time to impart any change in palatability.



The Royal Exchange, 1568-1936

A review of London's historic centre of commerce.

Proclaimed by Queen Elizabeth in 1571

"The Royal Exchange," the comely Burse for merchants to assemble upon, erected in Cornhill by Sir Thomas Gresham, at his own cost, was destined to be the Foundation Stone on which, through the centuries, the commerce of the United Kingdom was built up to a position of world supremacy. Destroyed in the Great Fire of London in 1666, a second Exchange was built on the same site and opened for business in September, 1669, only to suffer a similar fate in January, 1838. The present and third Royal Exchange was completed in October, 1844, and opened by Her Majesty Queen Victoria. The River Thames has aptly been referred to as "Liquid History"; equally so may London's three Royal Exchanges be termed "Commercial History." Today, shorn of much of its glory as a centre of commerce, it is acknowledged by all as the City's outstanding landmark, the scene of Royal Proclamations and the place where Londoners gather together on all great national occasions . . . in times of crisis, joy and sorrow.

THE FIRST ROYAL EXCHANGE, 1568-1666

"To erect and build at his own cost a comely Burse for merchauntes to assemble upon." This offer made by Sir Thomas Gresham was considered by the City of London Court of Aldermen on January 4, 1564, and it is recorded that "after the gentle and very fryndely offer of the ryghte worshippfull Syr Thomas Gresham, Knyght, made unto the courte here this daye for the erectyng and buyldyng at his onely costes and charges of a comely Burse for merchauntes to assemble upon, so that the cytye at their charges wyll provide and appoynte a mete and apte place for the same, beinge well and ryvely conceyvyd and understonden by the courte, yt was fynally grauntyd and agreyd by the same courte, that the cytye at their charges shall provide an apte and mete place for the saide purpose. And yt was also grauntyd and agreyd that he shalbe lycensed to sett suche straungers on worke in and

aboute the makyng of the same Burse as to him shalbe thought requysytt and nedefull to be hadde; for thaccomplishment of wch graunte made by the saide courte, Mr. John White, Mr. Rowe, Mr. Heywarde, aldren; Gefery Walkeden and Thomas Banyster, skinnners; Frauncis Barneham, draper; George Barne, haberdassher; and Robert Dove, merchaunt-taillor, beinge here present, were furthwith namyd and appoyntyd to view and consider the sundry placys here namyd and remembryd this daye to be apte and mete for that purpose, and to consider very earnestly which of all the same places shalbe moste apte and beste for all intents to make the seide Burse uppon, and to make reporte therof to my L. Mayre and his brethren th' aldren, upon Sondaye next, at viij of the clok, in the chappell in Poules Church, wherein they doe usually assemble before the sermon tyme."

The credit for the idea of building a central meeting place in the City for merchants must, however, be given to Sir Thomas's father, Sir Richard Gresham, Lord Mayor, who in 1537 submitted a plan for a Burse and the following year wrote to Thomas Cromwell, Lord Privy Seal:—

"The last yere I shewyd your goode lordeshippe a platte, that was drawn howte for to make a goodely Burse in Lombert Strette for marchaunts to repayer unto. I doo supposse yt wyll coste ii M li, and more, wyche shalbe very beautyfull to the citte and allsoo for the honor of our soveraynge lord the King. But ther ys serten howssis in the sayd strette belongyn to Sir George Monnocks; and excepte wee maye purchesse them, the sayd Burse cannot be made. Wherfor yt may please your goode lordeshippe to move the Kyngs highnes to have hys most gracious lettys directyd to the sayd Sir George wyllynge and allsoo commaundyng hym to cawse the sayd howssys to be sold to the mayer and commonaltye of the City of London for such prices as he dyd purchys them for; and that he fawte not but to accomplyshe hys gracious commandement. The lettys must be sharpley made, for he ys of noe gentyll nature, and that he shale giffve further credens to the Mayer, I wyll delayer the lettys and handyll him the beste I can, and yf I maye obtaingne to have the sayde howssys, I doubt not but to gather M pounds towerde the bulldyng, or I departe howte of myne office. Ther shale lacke noe goode wylle in me. And thus our Lorde preserve your goode Lordeshippe in prosperous helthe, long to contynewe. At London the xxv daye of Juyly (1538). All yours att your Lordeshipes commandement." *Ryc Gresham.*

Sir Richard Gresham's proposals appear to have met with the anticipated opposition and the scheme did not mature. Some



twenty-seven years later his second son, Sir Thomas, succeeded in gaining the support and co-operation of the City Fathers and, in due course, the first Burse was built on a site between Cornhill and Lombard Street, which involved the purchase and pulling-down of about eighty buildings in Swan, New and St. Christopher Alleys and in Cornhill, including the mansion of the Lord Mayor. On February 9, 1566, Sir Thomas Gresham met certain Knights, aldermen and merchants at the house of Mr. John Rivers, Alderman, and "did most fraunckley and lovingly graunte and promysse that wthin one monthe next after the buildinge and fully fynysshinge of the Burse and pawnes and other buildings intended, he wold assure to the citie for the cittie's use the moytie of all the said Burse . . . the proffits to come to the said citie . . . after the decease of the said Sir Thomas Gresham and of his wiffe . . . and the other moytie he hath likewise promysed to leave to the Mercerye . . . and for the sever performance of the premysses the said Sir Thomas, did give his hande to Sir William Garrard, and dranke a carouse to Thomas Rowe."

In June 1566, Sir Thomas Gresham laid the first stone and in December 1568 the building was completed and opened for business. The cost of the soil and tenants' unexpired leases was £3,431 os. 8d., legal expenses amounted to £101 16s. 6d., making a total of £3,532 17s. 2d., of which members of twenty City Companies, including Mercers, Iremongers, Grocers, Skinners, Merchaunte Taylors, Clothworkers, Salters, Vintners, Dyars, Scriveners and Girdlers, contributed £1,685 9s. 7d. In the sixteenth century any list of merchants described as "Grocers" would include a number of dealers in drugs. A grocer of those days was one who bought and sold a very wide range of merchandise in "gross quantities," about the only exceptions being wool, cotton, silk and textiles. To-day, they would be described as general merchants. The close connexion between drug merchants and grocers continued for the next hundred years or more, as will be seen by the plan of the merchants' pitches in the quadrangle of the second Royal Exchange. The annual revenue was about £731. The Burse had a frontage to Cornhill of 120 feet and was practically oblong in shape. The building was constructed chiefly of foreign materials. The stone came from Belgium, the floor of the quadrangle was laid with Turkish blue hone stones, the alabaster was from the Low Countries and the workmen were mostly Flemish, who were directed by one of their countrymen, by name Henrik. There were piazzas round the interior, supported by marble pillars, opening into an inner court or quadrangle which was not covered in. Over the inner panelling, within the arcade, were sculptures of river gods. In niches within the quadrangle and immediately above the cloister in the covered walk, stood the statues of our Kings and Queens from Edward the Confessor to Queen Elizabeth; those of James I, Charles I and Charles II were added at later dates. The statue of Charles I was thrown down immediately after his execution, and on the pedestal was inscribed in gilt letters, *Exit tyrannus Regum ultimus*. "The tyrant is gone, the last of the kings." This inscription was removed immediately after the restoration and a new statue erected. A bell tower crowned by a large grasshopper (Sir Thomas Gresham's crest) stood on one side of the chief entrance. On the first floor were about a hundred shops and it is recorded that among those "that kept shoppes in the upper Pawne were Armorers, Apothecaries, Goldsmiths, Booksellers, etc." There is no known record of what the building cost Sir Thomas Gresham.

Queen Elizabeth's Visit

Queen Elizabeth visited the Burse on January 23, 1571, and it is recorded that "after she had viewed every part thereof above the ground, especially the 'Pawne,' which was richly furnished with all sortes of the finest wares in the citties, she caused the same Burse by an Heralde and a Trompet to be proclaimed 'The Royal Exchange,' and to be called from thenceforth and not otherwise." At the time of her visit to the Royal Exchange, Queen Elizabeth, according to legendary history, presented to the City a Pearl Sword. This is confirmed by a reference to "Her Majesty's Sword" a few years later on a ceremonial occasion at the Tower of London, and by the fact that there is no mention in the City's records of the purchase of the sword or of it having been obtained by way of

gift from any other source. Since 1571 to the present time the Pearl Sword has always been surrendered at Temple Bar by the Lord Mayor to the reigning monarch on State visits to the City. At this time the Exchange was in a flourishing condition, with all the shops tenanted. It was not only the recognised meeting place of the merchants but also the rendezvous of men and women of fashion. During the business hours the quadrangle was thronged with merchants from all the then known countries of the world and in the evening the shops in Paul's Walk and the Pawn were the Bond Street of the period, being crowded with the ladies and their gallants.

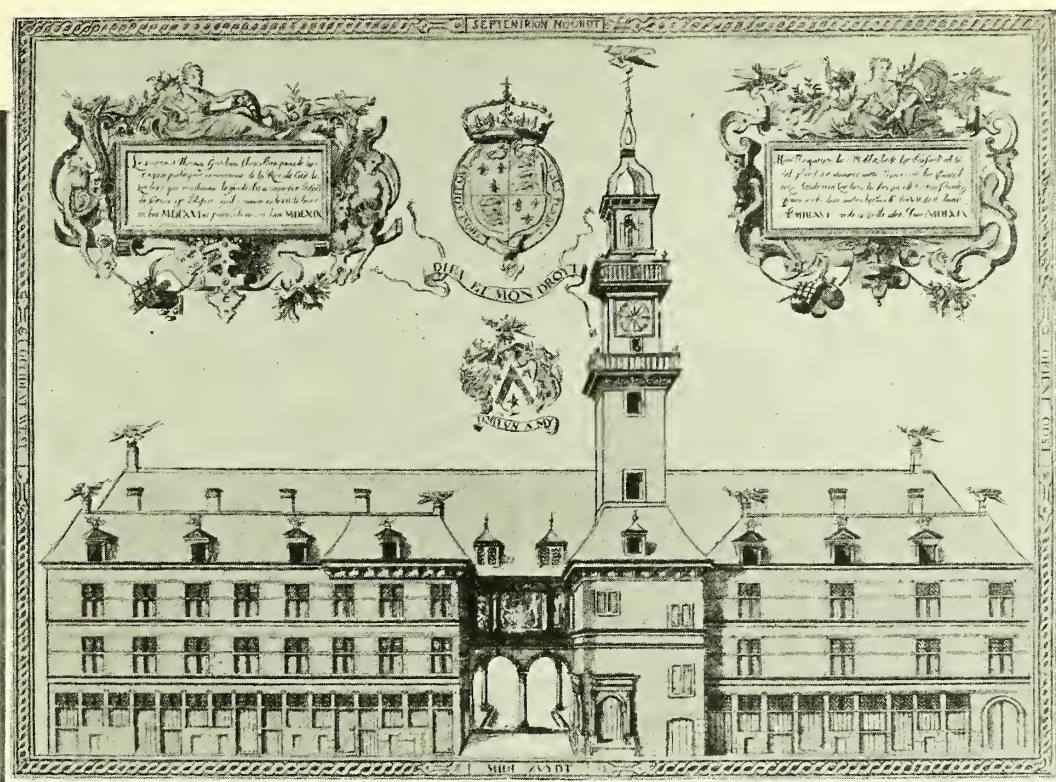
Only twelve years after completion, in 1581, it was reported that the Exchange "was dangerous for those which walk under, part being broken and like to fall down," and later . . . "by the insufficiency of the workmanship thereof and want of good stuff" . . . "was greatly defective and very perilous, in such wise as the mayne free stones of the arches are ready to fall." In 1598 the south and south-west ends of the Exchange were notified as "cracked and dangerouslie decayed." The building appears to have remained in bad repair, during the next thirty years and in 1624 "the Dyall and Clocke was reported as not being kept well, it standing in one of the most public places in the Cittie, and being the worst kept of any Clocke."

The Fire of London

In the early morning of September 2, 1666, the Great Fire of London broke out, originafing in the house of one, Farryner, the King's baker in Pudding Lane. The fire quickly spread up Thames Street, along Gracechurch Street, and Lombard Street and on to Cornhill, and the Royal Exchange was utterly destroyed. One record of the fire states "No stately buildings so great as to resist the fury of the flames, the Royal Exchange itself, the glory of the merchants, is now invaded with much violence, now quickly did it run round the galleries, filling them with flames, then descending the stairs compasseth the walkes, giving forth flaming vollies and filling the court with sheets of fire. By and bye the Kings fell all down upon their faces, and the greater part of the stone building after them (the founder's statue alone remaining), with such a noise as was dreadful and astonishing." Such is the description, recorded at the time, of the burning of the first Royal Exchange.

The official records make practically no reference to the life and conduct of the merchants, shippers and the many others who frequented 'Change in those early days, but we have discovered in a little book entitled "London and the Countrey carbonadoed and quartered into several characters," published in 1632, in which Daniel Lupton says of the Exchange . . . "The merchants are men generally of good habits, their words are usually better than their consciences: their discourse ordinarily begins in water, but ends in wine. The frequenting the walkes twice a day and a careless laughter argues that they are sound; if they visit not once a day, 'tis suspected they are cracking or broken. Their countenance is ordinarily shap'd by their successe at sea, either merry, sad or desperate; they are like ships at sea, top and top-gallant this day, tomorrow sinking. . . . Conscience is sold here for naught, because it is as without sermons, a dead commodity. They will dissemble with and cozen one another, though all the Kings that ever were since the Conquest overlook them."

The Society of Apothecaries is the only one of the three medical corporations which has remained within the civic fold. It came into existence in 1617 by secession from the Grocers' Company, its charter being granted in order that "the ignorance and rashness of presumptuous empirics and ignorant and unexpert men may be restrained whereupon many discommodities inconveniences and perils do daily arise to the rude and incredulous people." This charter conferred extensive powers, even limiting those of the surgeons, who were allowed in future only "to compose and apply outward salves and medicines so long as they did not vend or expose to sale to others such salves or medicines according to the common manner of the Apothecaries of London." The Society appears to have passed very soon from the sale of drugs to what the modern pharmacist would describe as "counter-prescribing." In so doing they aroused the opposition of the College of Physicians, and a controversy arose, in which the poets of the period took



The first Royal Exchange, 1569—1666



Sir Thomas Gresham, 1519—1579



Queen Elizabeth arriving at the Royal Exchange, Jan 1571



sides. Dr. Samuel Garth referred to the Apothecaries and their Hall in Water Lane as follows:—

Nigh where Fleet Ditch descends in sable streams
To wash the sooty Naiads in the Thames
There stands a structure on a rising hill
Where tyros take their freedom out to kill.

Nevertheless, the Apothecaries prospered. They obtained the right to dispense and sell medicines without the prescription of a physician, and were successful in resisting the physicians' claim to examine and condemn their drugs. It still remains faithful to its ancient Guild organisation and to its "structure on a rising hill," which is one of the most charming of the Livery Companies' Halls. Only a few years ago it was possible at the Hall to buy a box of pills, purchase a ton of senna or some other drug, obtain a diploma as a dispenser, graduate in medicine, surgery and midwifery, and become a liveryman of the City of London, and so qualify for office as Lord Mayor of London.

For ninety-seven years the Royal Exchange had played a leading part in the life of the City of London and the commerce of the country. Sir Thomas Gresham had succeeded in establishing the English merchants as masters in their own City and, by means of his Burse, struck the first blow against the pernicious rule of the Lombardy men and the Stillyard merchants of the Hanseatic League, which for some five centuries since the reign of Edward the Confessor, had held a monopoly of the export of the most valuable raw materials and the import of the more important finished products, besides many other

privileges. The great stores of the Stillyard stood on the banks of the Thames, near the present site of Cannon Street Station. They were first known as "Stapelhof," which later became anglicised into "Stilliards." Seven years after her visit to the Royal Exchange, Sir Thomas Gresham succeeded in inducing Queen Elizabeth to declare null and void for ever the privileges of the Stillyard merchants. The following year she forbade them to export wool, thus depriving them of their chief monopoly. A threat of reprisals from the Diet of the Hanseatic League to expel members of the English Company of Merchant Adventurers in Germany was instantly met by a proclamation which ordered the closure of the Stillyard and bade every German merchant to leave the country. Thus, through the good services of Sir Thomas Gresham and the strength of character of Queen Elizabeth, disappeared an institution which had held a stranglehold on English commerce for centuries. Her long reign saw the flowering of the English Renaissance, the beginning of imperial expansion and the rise of England to the position of a first-class power. It may therefore well be said that the Royal Exchange was the foundation on which was established our supremacy at this time in world trade. During the twenty-two years James I was on the throne the business of the Exchange appears to have continued fairly satisfactory, but in the reign of Charles I, with civil war and revolution in the country, the building itself and the conduct of business seems to have fallen on bad days. Conditions did not improve much in the early years of Charles II, but later, after the Merry Monarch had returned from exile in 1660, commerce and with it business on 'Change improved.

THE SECOND ROYAL EXCHANGE, 1669-1838

Only sixteen days after the Great Fire the Joint Gresham Committee met and decided to rebuild the Royal Exchange on the same site; a proposal to transfer the venue to Queen-lithe being rejected. On the same day arrangements were made to provide temporary accommodation for the merchants and the shopkeepers of the Pawn at Gresham College, which had escaped destruction. Early in the following month the Joint Committee met on the Exchange ruins and "gave orders for the labourers to separate the lead, iron and stone from the rubbish, and appointed two foremen to overlook the work, to have 18d. a day for their pains." From then onwards the Committee met on the site each Friday morning at eight o'clock "to consult and treat with artificers and workmen and also how and where to provide materials." The records show there was a refreshing absence of "red-tape" in the proceedings. In November the City Surveyors, Mr. Mills and Mr. Jarman, were directed to inspect the materials remaining and to estimate for building on the old foundations which had not been seriously affected by the fire. In February, 1667, the Grand Committee met to resolve "what is to be done for speedy raising of munny, the only engine that can give vigorous motion to the great and needful worke," and the City Surveyors were ordered to estimate "how much ground would be needful to make convenient streets at both ends." In April Mr. Mills, the chief surveyor, declared he was unable to proceed with the work, and the Committee appointed Mr. Jarman to be their architect, who, in due course, designed the plan.

In September a deputation waited on Charles II with plans of "the maine worke" and in order to obtain leave to extend the south-west angle into the street. His Majesty came to the site on October 23, 1667, and fixed the first pillar on the west side of the north entrance. He was entertained by the City and Company with "a chine of beef, dish of fowl, gammons of bacon, dried tongues, anchovies, caviare and plenty of sorts of wine"; the entertaining was in a shed upon the Scottish walke. On the last day of the same month James II, then Duke of York, fixed the first stone of the pillar on the east side, and on the following November 18 Prince Rupert fixed the first stone on the east side, south entrance, and they were both entertained in a similar fashion as was Charles II.

In 1668 the work was delayed a good deal on account of the unwillingness of the owners and tenants of the sites required

for extending the new building to treat on reasonable terms, and it is recorded in December "that only the inner quadrangle be finished until the Committee do settle their business in a better method." One interesting note on the records states that Samuel Webb, mason, who was sorely hurt at the Royal Exchange, upon the fall of a scaffold, was given in charity £3, and the Committee agreed "to pay the chyrurgion (surgeon) for the cure." Early in 1669 the Committee were much concerned with the continued delay in the progress of the work, due to lack of materials and to trouble in negotiations with the owners of the land required.

The main structure was, however, completed within three years, and on September 28, 1669, the Lord Mayor, Sir William Turner, who performed the opening ceremony, "came and walked twice about it and congratulated the merchants on the 'Change on its account." The assemblage was much disappointed by the absence of Charles II, who was to have been the guest of honour. Possibly, the fact that the Committee had quite recently rejected an offer of an equestrian statue in white marble of His Majesty, to be placed in the centre of the quadrangle, may have been the cause of his apparent displeasure. The building was by no means complete, for a large amount of work was carried out subsequently. In August, 1670, the building narrowly escaped destruction by fire, for it is recorded the Committee rewarded James White, virginal maker, and two others for "eminent service, being very instrumentall in stopping the fyre at Bartholomew Lane end."

In September 1670 a four-dialled striking clock, playing six tunes, to cost about £120, was ordered to be set up in the cupola of the Exchange. Early in 1671 a set of ten bells for the chimes was installed, the cost being at the rate of £6 5s. for each hundredweight. The chimes played four times daily, with a repertoire of "God Save the King," "The Waterloo March," "There's nae Luck About the Hoose," "See the Conquering Hero Comes," "Life Let Us Cherish," and "Foot Guards March."

In May 1671 the workmen were discharged, the work being practically completed. The cost of the building was £58,962, which, with £7,017 paid for additional land, made a total cost of £65,979. Although beautiful in its style of architecture, it does not seem to have been soundly erected, for as early as 1767 £10,000 was raised to pay for necessary repairs. During the next sixty years the building continued in a bad state of



Interior of first Royal Exchange



Interior of second Royal Exchange



The second Royal Exchange, with original Tower, 1669—1838



The Fire at the second Royal Exchange, showing second Tower, January, 1838



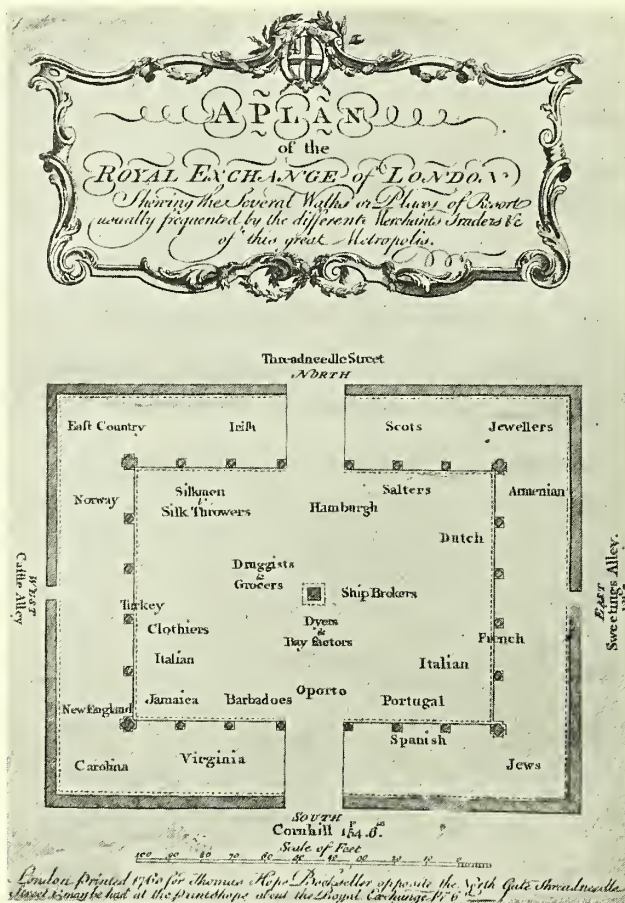
repair, and altogether the cost of work carried out was £33,490 9s. 1d., which included the taking down of the old tower, which had become unsafe. It was a structure of 178 ft. high, divided into three stories, the two upper of timber and the lower of stone, surmounted by a cupola and a weathervane in the form of a grasshopper. The second tower, designed by the surveyor to the Gresham Committee, was only 128 ft. 6 in. high, and the design did not harmonise with the main building. A series of statues, similar to those erected in the first building, were placed in niches of the second Royal Exchange, representing the Kings and Queens of England from Edward I onwards.

The fire which was to destroy the second Royal Exchange was discovered by two Bank watchmen on the night of January 10, 1838. For a time, due to a severe frost, neither engines nor hose could be used, and by two o'clock on the following morning the new tower was in flames, the hands of the clock stopping at twenty-five minutes past one. The records state that the three last tunes played on the chimes were "Life Let Us Cherish," "God Save the King" and "There's Nae Luck About the Hoose." Very soon the peal of eight bells fell into the flames. Right through to noon of the following day the fire raged, completely destroying the main structure. It is a remarkable fact that, of the statues erected in the building, that of Sir Thomas Gresham, which escaped injury in the destruction of the first building, was again unharmed in the second fire.

Lasting a few months over 168 years, the second Royal Exchange had rather a chequered career. Unquestionably, it had been made great and successful use of by the City merchants, but various comments of that time indicate that it had lost a good deal of its importance of the days of Queen Elizabeth. For instance, in the reign of Queen Anne (1702-1714) "The Spectator" makes the following comment: "Instead of the assembly of honourable merchants, substantial tradesmen and knowing masters of shops, the mumpers, the halt, the lame and the blind and vendors of trash . . . the benches are so filthy that no one could sit down." In November 1670 the Court of Aldermen issued the following order: "This court having formerly thought fitt to reinforce by a printed declaration the antient rules and regulacon of the times of resort to and retirement from the Burse or Royall Exchange of this city, upon the appointment of the place of meeting to bee in Gresham Colledge after the destruccon of the old Royall Exchange by the late generall conflagracon, which rules were duly observed untill the said old Royall Exchange was by God's blessing and assistance made capable of and used for the concourse and negotiacon of merchants and other traders; and whereas this court is now informed that of late the said merchants and traders have taken the liberty to relapse into the former disorders of transacting their affaires,

proper to the Exchange, in tavernes, coffee-houses and places of common entertainment, which detracts from the reputacon and fullnesse of that eminent concourse and meeting on the Exchange, to the scandall of this city, the disorder of trade and families: It is thought fitt by this court once more to declare and order, that the noone Exchange shall commence at eleaven and depart at twelve of the clocke, and at nights, from Michaelmas to our Lady-day, to beginne at five and departe at six, and from our Lady-day till Michaelmas, to beginne at six and depart at seven, for which parting a warning shall bee given by the ringing of a bell." This Act for the Regulation of Exchange hours imposed fines of one shilling on offending merchants and tradesmen who disregarded the proper hours of 'Change, and ten shillings, in the first offence, and twenty shillings for the second, with dismissal of the office and employment, on brokers. Despite the apparent bad ways into which the merchants had fallen during the years of their temporary accommodation in Gresham House and state of general disrepair of the building, business does not seem to have been much affected. Going on 'Change continued to be the most important part of the merchants' activities. To quote "The Wealthy Shopkeeper":—

"For half-an-hour he feeds:
and when he's done
In's elbowchair he takes a
nap till one;
From thence to 'Change he
hurris in a heat
(Where knaves and fools in
mighty numbers meet,
And kindly mix the bubble
with the cheat);
There barters, buys and
sells, receives and payes,
And turns the pence a hun-
dred different ways.
In that great hive, where
markets fall and rise,
And swarms of muckworms
round its pillars crawl,
He, like the rest, as busy
as a bee,
Remains among the hen-
peck'd herd till three."



Plan of the merchants' pitches on 'Change in the second Royal Exchange (circa 1700).

A plan of the quadrangle in the Royal Exchange, showing pitches of the merchants, is reproduced on this page. It will be seen that the druggists had a prominent position. For the next 250 years, up to the present day, they have met on the same spot.

During the period of wild speculation of the "South Sea Bubble" in the early eighteenth century, the climax of which was utter ruin for thousands of foolish investors and an almost complete breakdown of the country's finance, took place in and around the Royal Exchange. Founded in 1711 by Robert Harley, Earl of Oxford, to take over England's Floating Debt of £10,000,000, the South Sea Company was given a monopoly of trade with the Southern Sea Atlantic coasts of America. There was a great rush of speculation and money was poured into the City. In 1720 George I proposed that the South Sea Company should also take over the entire English debt of £31,000,000.

Out of the financial and business chaos that followed arose the Royal Exchange Assurance Corporation, the first marine assurance office in the country. It is recorded, a certain Mr. Case Billingsley, solicitor and a member of the Mercers Company,



Top: Interior of the third Royal Exchange, 1844-1936.

Below: View from the ambulatory.

opened a marine insurance office called the "Public Assurance Office," opening a List at the Mercers' Hall and establishing an office in the Royal Exchange in 1720. He applied for, but was refused, a Charter by Lord Chancellor Cowper, but got over that difficulty by purchasing an old Charter of Queen Elizabeth's time granted to the Mines Royal, Mineral and Battery Works; its Coat of Arms was a miner working by candlelight! The enterprise was successful, and later became known as the "London Assurance Corporation" and ultimately a Royal Charter was granted and the title was again amended to the present name. In 1721, besides marine insurance, life and fire insurance was undertaken. The Royal Exchange Assurance Corporation has been intimately connected with the Royal Exchange for over two hundred years.

National fortune had swung backwards and forwards a good deal during the century and a half of the second Royal Exchange. Six Kings and one Queen had sat on the throne of

England, two of whom, George I and George II, could not speak English, and finally George III, who, after the American war and the loss of Colonies, became mad and was stricken with blindness. There had been periods of prosperity followed by depressions and privation. Troublous times at home had been experienced, and there had been wars and threats of war. International trade, however, continued to increase, and the Royal Exchange played its part in maintaining London's position as the world's centre for the sale and purchase of an ever-widening variety of merchandise. According to contemporary writers, the change that had the most marked effect on the welfare and reputation of the City merchants was a purely local one—that of the spreading of London far beyond Temple Bar. The Court and fashion had deserted the City and had moved West, with residences in Pall Mall, Soho and the fields of Bloomsbury. The merchants, who mostly lived over their business





premises, had become isolated and were no longer a power with the Throne or in Parliament, such as they were in the days of Sir Thomas Gresham and Queen Elizabeth. In the closing years, due to the extension of the franchise, the influence of the Court

and nobility passed to the middle classes, and with it began an era of prosperity and renewed power of the City merchants, which, in the years to come, with the arrival of steam power, brought great renown and wealth to the City of London.

THE THIRD ROYAL EXCHANGE, 1844-1936

Once more the Gresham Committee undertook the burden of rebuilding the Royal Exchange. No time was lost, for the records show that on March 8, 1838—only eight weeks after the destruction of the second building—it was decided to "rebuild on an enlarged scale and in such manner as to afford increased accommodation to the mercantile interest; to improve the approaches by purchasing the bank buildings on the western side and certain houses in Cornhill and Threadneedle Street." The estimated cost was £200,000, of which about £150,000 was raised on the security of the London Bridge Approaches Fund, and application was made to the Government for a grant of £40,000. In August, Royal assent was given to an Act "for improving the site of the Royal Exchange," and by early October a ground plan had been approved. Then followed a dispute which lasted for fifteen months between the Gresham Committee, who were supported by the Corporation of London, and the Lords of the Treasury. It seems the Treasury demanded they should first approve the plans and estimates of the building as well as the site plan, while the Gresham Committee contended that, as they were defraying the whole cost of the building—the grant of £40,000 from the Government being required for the extended site—the Treasury had no authority over what manner of building should be erected. Eventually the matter was referred to the House of Commons, resulting in the Treasury giving their consent without approving the plan of the building.

In May 1840 plans and designs of the proposed new building by William Tite, president of the Architectural Society, were approved. In May 1841, when excavating for the foundations, coins of the Emperor Vespasian and Domitian and several copper and wood styles used for writing on waxen tablets and two of the tablets themselves were discovered. A strigil in mixed metal as used in the Roman baths was also unearthed. The cost of the foundations was £7,638. A few months later the tender for building the new Exchange of Mr. Thomas Jackson, of Pimlico, amounting to £115,900, was accepted. The first stone of the new building was laid on January 17, 1842, by Prince Albert, who was accompanied by the Duke of Wellington and a large number of the Court. He and his company were received by the Lord Mayor, and the ceremony was performed in a temporary building accommodating 1,500 spectators. A bottle containing a number of coins was placed in a well prepared for it by His Royal Highness at the time of laying the stone. A zinc plate on which was inscribed a brief outline of the history of the two previous buildings was also placed in the stone, which was of granite and weighed four tons. The Royal party

then partook of a "sumptuous entertainment" at the Mansion House, the bill for which amounted to £1,176 19s. 1d.!

A tender for architectural carvings for £6,400 was approved, and in July Mr. Dent's tender of £700 for the clock, excluding the bells, was accepted, with Mr. Charles Mears, of Whitechapel, providing the latter at a cost of £533 7s. 4d. and £82 for fixing the same. Later the number of bells was increased from nine to fifteen at an additional cost of £290. In March 1844 a further £5,000 was appropriated for additional sculptural decorations, which included a statue of Sir Richard Gresham to be placed in the tower at the east end of the building. The following month a statue of Queen Victoria, to cost one thousand guineas and to be placed in the centre of the merchants' quadrangle was decided upon. The ceilings of the ambulatory were embellished with a series of paintings in wax, at a cost of £1,740. This work was done by twenty-nine artists, eighteen of whom were German.

On October 28, 1844, the building having been completed, was declared open by Queen Victoria, who was accompanied by Prince Albert and other members of the Royal Family. They were received by the Lord Mayor, the Gresham Committee and members of the Mercers' Company. Her Majesty made a thorough inspection of the building and afterwards, standing in the centre of the quadrangle, made the following declaration: "It is my Royal will and pleasure that this building be hereafter called the Royal Exchange." The final cost of improving the site was £233,700 7s. 4½d. and the building £168,534 6s. This was much in excess of the estimates; the balance was met out of the City's funds.

In 1883 the merchants attending the 'Change petitioned for the quadrangle to be covered in. This work was carried out at a cost of £20,000, the design in iron and glass was much admired for its elegance and lightness. In June 1894 the old chimes were found to be worn out, and it was decided to replace them with a carillon with three interchangeable barrels, each playing seven tunes representative of English, Scotch and Irish popular airs. The new chimes were set in motion in July 1895 by the

Master of the Mercers' Company. On June 19, 1896, the fiftieth anniversary of Queen Victoria's accession to the throne, a new statue of her Majesty, to replace the original one of 1845, in the centre of the quadrangle, was unveiled by the Lord Mayor. It is 18 ft. high and was cut from a piece of white marble weighing eleven tons. The last additions were the painting of a number of frescoes on the twenty-four panels of the interior of the building, the scenes depicted being symbolical of liberty, commerce, education and historical events within



The third Royal Exchange, Eastern entrance



the City. The three last are "Women's Work in the Great War"; a group of King George V and the Prince of Wales (now King Edward VIII) in Flanders, and the National Peace Thanksgiving Service on the steps of St. Paul's Cathedral, July, 1919. We reproduce on p. 749 one of the paintings, showing Queen Elizabeth arriving at the Royal Exchange and being received by Sir Thomas Gresham.

Of the building itself it is well worth recording that the Turkish blue hone stones in the floor of the quadrangle are the original stones laid in the first Royal Exchange in 1568. Salvaged from a shipwreck, they were not damaged in the first or second fires, and to-day their value on the site is estimated at about £20,000. Another original feature is the gilt "Grasshopper" which surmounts the tower at the east end of the present building; according to the records this crest of Sir Thomas Gresham escaped the first fire, was set up in the second building and was damaged in the fire of 1838, and on December 8, 1842, after being repaired and re-gilded, was again set up on the present structure.

Industrial prosperity came to England with the advent of steam and the era of machinery that followed in due course. During the long reign of Queen Victoria, and particularly in the years after the death of Albert of Saxe-Coburg in 1861, the Royal Exchange experienced a period of great prosperity. London's waterway was congested with ships, arriving and departing, loaded with goods of every description. The industrial era and international commerce developed hand-in-hand during the last forty years of the nineteenth century, with London playing its part as the great business centre and the Royal Exchange the hub of the City's activities.

Drug Trade Personalities

With the coming of the twentieth century London's trade continued to increase and prosper, and it is with this period of what may be described as the "good old days" of the drug trade that we still have living contact. There are still with us a number of members of the drug, chemical and essential oil trades who can recollect the time when the daily session of three to four o'clock in the afternoon was attended by representatives of practically every merchanting firm and most of the chemical and essential oil manufacturers and, of course, manufacturing chemists and druggists; one or two of the brokers also used to put in attendance. They recall the years from the closing decade of the nineteenth century up to the conclusion of the Great War; during this period being on 'Change was of first importance. Daily, week in and week out, the attendance was from fifty to seventy, and each representative had his own spot on the floor. Substantial business was done every day, and in all but a very few instances the proprietor or a director of the firms attended 'Change. Most of the merchants specialised in particular articles, and the quality of their goods became more or less standardised and well known, and samples were not usually called for by the buyers. The silk hat was still the vogue, although we are told that early in the twentieth century there was a gradual breakaway to the "bowler." 'Change opened at three o'clock and the doors were closed at 3.35, and after that time it was not easy to obtain admission. At four o'clock the business was carried on for another good half-hour outside the building, the members gradually dispersing, usually to the coffee houses to have a cup of tea, or to "Birch's," or "The Jamaica," there to refresh themselves according to their taste, prior to returning to their offices at something after five o'clock. It was almost an invariable rule that all D/O's of business done in the afternoon were dispatched the same evening, and after a good day on 'Change it was quite common for the staffs at the offices to be busy up to eight o'clock. There was a rule that samples must not be displayed on 'Change, but the interpretation of the word "displayed" was a lenient one. We have been assisted by some of the senior members of the trade in compiling the following list of some of the personalities who were regular attendants on 'Change at some time during the period 1890 to 1918:—Mr. Richard Quincey, who always had a flower in his coat, usually a carnation; Mr. Tapley, and later his son (W. C. Bacon & Co.); Mr. Gray and Mr. Evans (Evans, Gray & Hood), the former was recognised as one of the best-dressed men on the floor; Mr. Hugo Lorenz; Mr. Paton (Kirkpatrick,

Barr & Paton); Mr. F. C. Devon (F. C. Devon & Co.); Mr. C. F. Gerhardt and his son Gerald and Mr. E. G. Misani (C. F. Gerhardt, Ltd.); Mr. Joseph Flach, and later his eldest son (Jos. Flach & Sons); Mr. J. H. Z. Stallman; Mr. M. Pattison (R. Morrison & Co.); Mr. W. C. Brumley; Mr. C. H. Bryant; Mr. F. Boehm and Mr. J. Gordon (Fredk. Boehm, Ltd.); Mr. John Mullett, who was always first with the news of a change in the Bank rate; Mr. Charles Bell and Mr. W. Beckley (Chas. Zimmermann & Co., Ltd.); Mr. C. R. Tapscott; Mr. Chas. McCombie; Mr. Horner and Mr. Green (Horner & Sons); Mr. Davy Hill; Mr. Smee (Sparks, White & Co.); Mr. F. E. Annison (Bowyer & Bartlett); Mr. W. Bredt (Widemann, Broicher & Co.); Mr. Dodge (Dodge & Olcott); Mr. Thomas Nash (Hyde, Nash & Co.); Mr. Winterton (Godson & Winterton); Mr. Astor Boisselier; Mr. Garraway (August Faber & Co.); Mr. Felix Berk (F. W. Berk, Ltd.); Mr. Wheeler, and later his son Mr. Arthur Wheeler (Henry Wheeler & Son); Mr. A. S. Pickering, who rarely wore a hat on 'Change, which was very unusual in those days, and who was known in the trade as "Quick-silver"; Mr. August Zimmermann (A. & M. Zimmermann, Ltd.); Mr. W. G. Smith (R. W. Greeff & Co., Ltd.); Mr. Percy Samuelson; Mr. Samuel Lambert; Mr. Peutecost (Boake, Roberts & Co.); Mr. Mansfield (Wilson & Mansfield, Ltd.); Mr. Alfred Lambert, Mr. H. H. French and Mr. H. T. Groom (French & Plucknett); Mr. Radermacher (then of Lewis & Peat, Ltd.); Mr. Jones (Dalton & Young), whose long white beard will be recalled; Mr. W. S. Phillips (Jenkin & Phillips); Mr. Thomas Urwick (later Sir Thomas) (S. Figgis & Co.); Mr. Charles Mangold and Mr. Freudentheil. Among other members were Mr. Ziegele (Ziegele Schneidt); Mr. Boyce (B. A. Smith & Co.); Mr. R. Court Treatt; Mr. Courtin (Domeier & Co.); Mr. Tom Charity; Mr. Clifford Christopherson, who in his younger days, with three friends, used to embark in a four-oared boat at Greenwich Pier and row to the City each morning; Mr. H. Buchler; Mr. Otto Rubeck; Mr. D. W. Greenhough; Mr. Grosscurth; Mr. Wm. Charity and Mr. W. J. Crook. These were some of the merchants and brokers. Among the representatives of the manufacturing consumers were Mr. Alfred Bush and Mr. Kelly (W. J. Bush & Co., Ltd.); Mr. Lescher, Mr. Webb and Mr. Frisby (Evans Sons Lescher & Webb, Ltd.); Mr. H. R. Arnold and Mr. R. G. Halstead (Burgoyne, Burbidges & Co.); Mr. Kenneth Allen (Stafford Allen & Sons, Ltd.); Mr. Thomas Whiffen, whose white gloves and correct dress will be recalled; Mr. Charles Umney and Mr. Wright (Wright, Layman & Umney, Ltd.); Mr. Theodore Howard; Mr. Thomas Tyrer; Colonel Wyley (Wyley's, Ltd., Coventry); Mr. H. Potter (Potter & Clarke); Mr. F. Ransom (W. Ransom & Son); Mr. T. P. Morson (Thos. Morson & Sons), Mr. Croxford (Stevenson & Howell, Ltd.); Mr. F. G. Bailey (Dakin Bros.); Mr. Hodgkinson, Mr. Preston and Mr. King; Mr. Arnold Baiss (Baiss Bros. & Stevenson); Mr. Butler (Willows, Francis & Butler, Ltd.); Colonel Harvey (Barron, Harvey, Ltd.); Mr. Francis (Heron, Squire & Francis); Mr. Morgan (Harker, Stagg & Morgan); Mr. Mackenzie and Mr. Abrey (T. & H. Smith, Ltd.); Mr. Carnegie and Mr. MacDonald (J. F. McFarlan & Co., Ltd.); Mr. Bristow (Burroughs Wellcome & Co.); Mr. Blenkinsopp and Mr. Stevens (May & Baker, Ltd.); Mr. Dunn (Curling, Wyman & Co.) and Mr. John Raper, the C. & D. representative, who was, of course, well known on 'Change in those days.

With the gradual resumption of normal commercial conditions in 1919, there was a temporary and partial recovery in the attendances of representatives of the drug trade on 'Change on Wednesday afternoons, but during the course of the past few years the numbers became less and less, and to the few "faithful" who to this day still make a practice of going on 'Change once a week it is more of a custom than a business necessity. . . . And so the Royal Exchange, still one of London's most imposing buildings, situated in the heart of the City, is no longer the Mecca of the merchant and the shipper and the seller and the buyer of the world's merchandise.

We acknowledge with thanks the assistance and courtesy of the Town Clerk, the Director of Records and the Librarian of the Corporation of the City of London in allowing us access to the old records and documents of the City and for permission to reproduce old prints, etc., of the Royal Exchanges, and to the Gresham Committee for permission to photograph the interior of the present building.

June 27, 1936

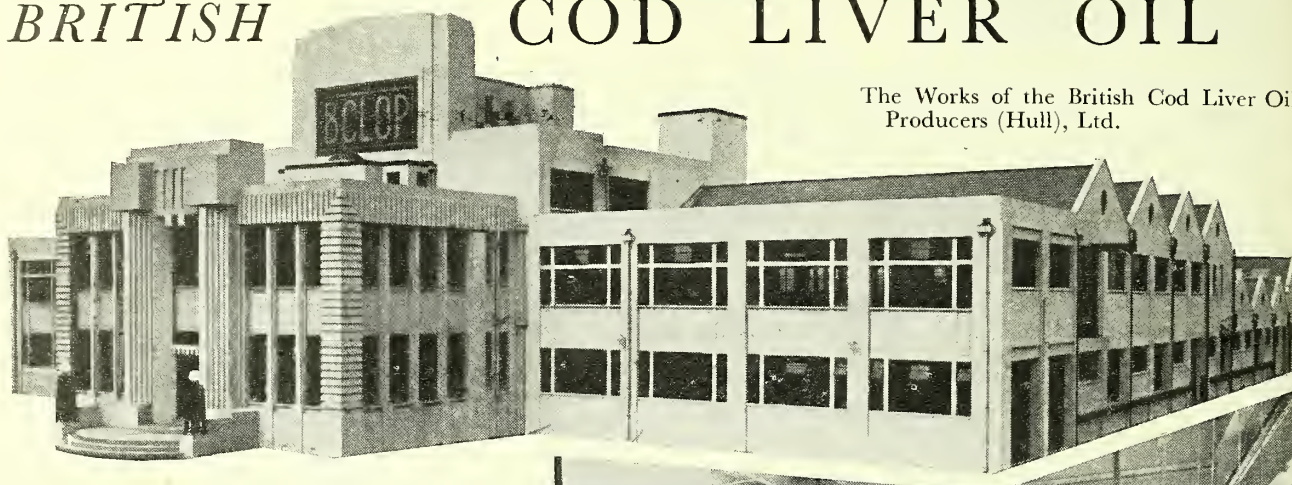
THE CHEMIST AND DRUGGIST

Special Issue

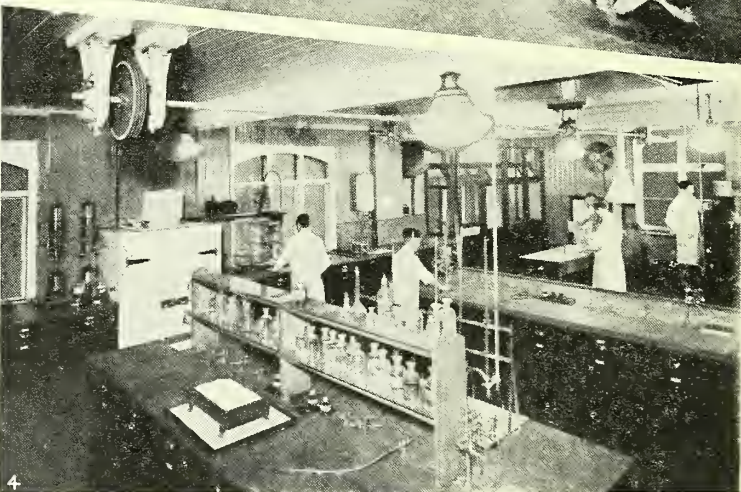
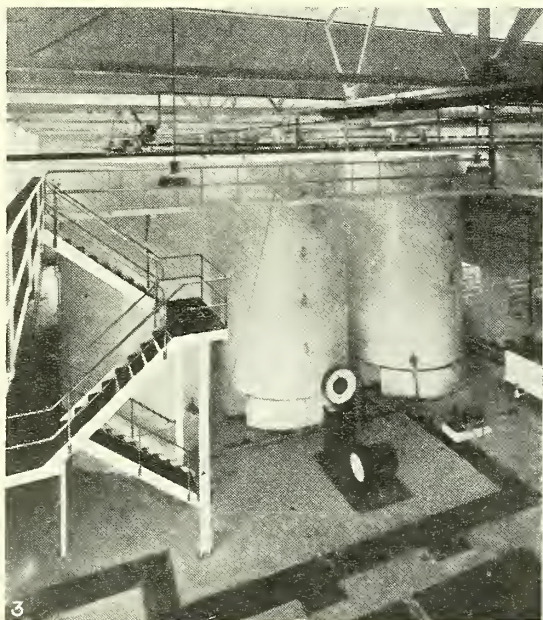
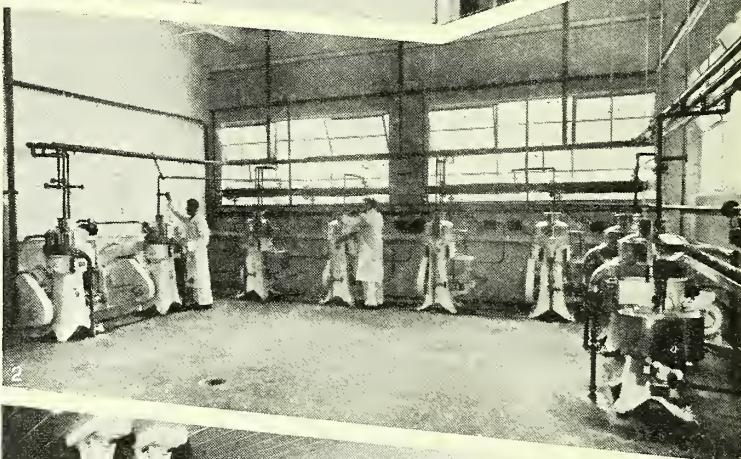
BRITISH

COD LIVER OIL

The Works of the British Cod Liver Oil
Producers (Hull), Ltd.



1. General view of the refinery
2. Centrifuging department
3. Main storage tanks
4. Section of the laboratory
5. Tank wagon for transport to the refinery
6. Trawler on which the first extraction is made





Britain's Cod-Liver Oil Industry

An Account of the Organisation behind the World's Largest Refinery

BRITAIN'S association with the cod-liver oil industry is of long standing, if formerly of small capital value compared with those of Norway and Newfoundland. Mention is perhaps hardly merited of Scarborough's one-time "hand-made" cod-liver oil industry, to which reference will be found in earlier issues of the *C. & D.*, but it is worthy of note that it was a Scarborough chemist, John Fox, who in 1848 set up a factory at St. John's, Newfoundland, to refine the oil by an improved process in which the livers were rendered by indirect heat in hot water jacketed pans. Of greater commercial importance is the Aberdeen business of Isaac Spencer & Co. (Aberdeen), Ltd., an article on which appeared in our Special Issue of four years ago. Full advantage of the experience gained in this business has been taken in the important organisation of British Cod Liver Oil Producers (Hull), Ltd., whose refinery at Marfleet, East Yorkshire, claimed to be the world's largest, is the subject of this article. The services of Mr. John Spencer as technical adviser were secured by the Hull trawler owners who compose the new company, which represents the organisation of an important industry on a national basis. The refinery, maintained to standards of exemplary, hospital-like cleanliness, handles the entire production of the fishing fleet of Hull. The trawlers of this port are the largest vessels of their kind in existence, and are fitted to operate on distant fishing grounds, at which cod yielding the finest oils are to be caught.

Method of Refining

The oil is rendered aboard ship in steam-heated pans of about two cwt. capacity, the livers being treated within a few minutes of the nets being hauled. This is an important factor in securing a finished product virtually free from taste. After rendering, the oil is run into storage tanks built into the trawler from which it is collected, at the home port, in a vessel specially designed and equipped for the purpose, thus setting free the trawlers for a speedy return to the fishing grounds. From this vessel, the oil is transferred to a motor tank wagon and conveyed to the company's refinery at Marfleet, on the outskirts of the city, and run off into settling tanks. From these it is fed by gravity into a battery of centrifugal separators where any traces of moisture are removed and transferred into large storage tanks. Representative samples are analysed to ascertain their content of Vitamins A and D, the latter being determined by biological methods. Upon the results of this assay, quantities of oil from various storage tanks are blended quantitatively to secure an oil of uniform vitamin content. After blending it is necessary to remove the stearine; the oil is therefore cooled to the required temperature and passed through filter presses. The resulting "non-freezing" medicinal cod-liver oil is run into special glass-lined tanks from which it is later filled into tin-lined barrels for delivery. Strict supervision throughout the whole process of

refining has resulted in an article practically without taste or odour, its natural vitamin potency remaining unimpaired.

Naturally an important point in the operations is the necessity for thorough testing of the oil for vitamin potency. Existing public facilities for the testing of Vitamin D being inadequate to provide the number of tests the company desire to make, a biological testing station costing over £5,000 has been constructed and is here illustrated. It will be capable of dealing with several hundred tests per annum on both rats and chicks. British cod-liver oil of both medicinal and veterinary qualities are standard products sold under a definite guarantee that they contain 100 International Units of Vitamin D and 1,000 International Units of Vitamin A per gram. The free fatty acid content is guaranteed lower than one-half per cent., and the unsaponifiable matter of both medicinal and veterinary grades is, of course, guaranteed less than 1½ per cent. Testing is, in part, carried out at various stages of the refining process. The first analyses are made in a laboratory maintained at the docks themselves, so that no time is

lost in delivering and testing the samples. At Marfleet each of the twenty-seven bulk storage tanks, of fifty-eight tons capacity, is graded after tests for vitamin potency. Further samplings of the oil after removal of the stearin are taken every hour for cold-testing. Routine chemical and biological assays are supplemented by research work, and at the



Newly-erected Biological Testing Station

St. Andrew's Dock laboratory every variety of problem related to the extraction and refining of cod-liver oil is carried out. For this purpose, the laboratory is fitted with refining plant in miniature, including liver boiler, experimental pressure boiler, separator, filter press, incubator and homogeniser.

The refinery has been planned without restriction of space, and with a view to easy and orderly progress of the oil through the various processes. Thus, the steel storage tanks into which the oil is pumped from the tank wagon are situated on the second floor. Gravity feeds the oil to the separator room at a lower level. Separation of the final traces of mucilage and water is effected in "Vickcea" centrifuges working in pairs. The blending of samples to secure a uniform product is carried out with the aid of a "flowmeter," by which the correct quantity of each sample is gauged. To identify the numerous pipes conveying oil at various stages of refinement; water, and steam, each system is painted a distinctive colour. Bleaching is effected in jacketed pans fitted with heating and cooling coils, the oil being kept in close and constant contact with the bleaching agent by an agitator. In this matter, tradition demands a pale oil, but it is hoped that consumers will gradually become educated to the fact that the colour of the oil bears little relation to its vitamin content. The removal of stearin is governed by a recording instrument which registers the rate of cooling in a "temperature curve." Filtration is carried out in filter presses. It has been stated that for delivery to purchasers the oil is run into tin-lined wooden drums. These are of 25-gallon capacity. For the veterinary oil, steel drums holding forty-five gallons are used. Production commenced during the summer of 1935.



The First Medicinal Patents

The term "PATENT MEDICINE," now loosely applied to *proprietarys*, had formerly a quite literal significance

THE origin of patent medicines presents many points of interest, especially from an ethical standpoint. The pioneers of medicine were proud of their discoveries, and their laudable endeavours were encouraged by the grant of a monopoly in the form of a patent. The first patents were documents granting powers and privileges in terms which may excite the envy of present-day patentees. The earliest did not disclose methods of working the invention, and when this became compulsory the "pioneers" of patent medicines said much and revealed little. The patents reviewed exemplify the evolution of patenting procedure. Antiquarian interest centres round the origin of medicines and products still in daily use.

Epsom Salts

(Grew's patent, A.D. 1698; No. 354)

Pride of place must be given to the patent for Epsom salts by Nehemiah Grew, a London physician who discovered its medicinal properties and read a paper thereon to the Royal Society in 1695. Part of the first page of the specification as reprinted in 1857 is reproduced. It was priced threepence, but was supplied many years ago by the Patent Office at sixpence, the price change being made by means of a rubber stamp. The inexpensive cost of the copy of the patent contrasts strongly with the extensive rights it bestows. The description of the invention is contained in the illustration on the opposite page. The grace and courtesy with which his Majesty William the Third expresses his willingness "to cherish and encourage all lawdable endeavours and designes of such our subjects as have by their industry found out vself and profitable arts, misteries, and invencons" is only equalled by the desire that the inventor "may reap some fruit and benefit of his labour and charge." This is made evident in the remainder of the document straightly charging, requiring and commanding "all and every person and persons, bodies politike and corporate, of what quality, degree, name or condicon soever they be" not to "use or imitate the said new invention under such paines or penalties as can or may be inflicted for the contempt of this our royall command." Provision is made for voiding the patent on the grounds that the grant is contrary to law or "prejudicial or inconvenient to our subjects in generall" or that it "is not a new invention as to the publick vse and exercise of the same." These correspond to the modern invalidation of prior discovery and prior use.

"Sal Oleosum Volatile"

(Byfield's patent, A.D. 1711; No. 388)

The interest in this patent lies in the fact that it was probably the origin of spirit of sal volatile, but the absence of any description of the ingredients or mode of making renders it impossible to confirm the correctness of this surmise. The relevant subject matter sets out that Timothy Byfield, Doctor in Physick, hath,

by long study and great experience, found out and brought to perfection A New and most vself Chemicall Preparacon and Medicine publickly known by the Name of his Sal Oleosum Volatile, which by abundant Experience hath been found very helpfull and beneficiall, as well in Vses Medicinall as others, and will very much tend to the Public Vse and Benefit of all our Subjects.

It will be observed that the pioneer patents did not conceal the expense of experiment in perfecting medicines. This public benefit is the real reason for the grant of a patent.

Stoughton's Elixir

(Stoughton's patent, A.D. 1712; No. 390)

The use of descriptive names for a patent medicine is the main feature of the patent granted by Queen Anne to Richard Stoughton, Apothecary, of the "burrough of Southwark in our County of Surrey" for a "restorative cordial and medicine." The description reads:—

A New and most vself Restorative Cordial and Medicine, which for its Effects has been experimentally found to tend to the Publick Good and Benefit of all our Subjects vsing the same, and hath for above Twenty Yeares, at the Extraordinary Costs of the Petitioner, been dispersed, and thereby gained vniversal Esteem throught our Kingdoms of Great Britain and Ireland, and likewise in many Forreign Parts, by the Name of Stoughton's Elixir Magnum Stomachicu, or the Great Cordial Elixir, otherwise called the Stomatick Tincture or Bitter Drops.

The revelation that the invention had already been in public use for twenty years is ingenuous. However, the "publick good and benefit" of Stoughton's Elixir is proved by its being in vogue a century later—it was included in the Schedule to the Medicine Stamp Act, 1812.

Hooper's Pills

(Hooper's patent, A.D. 1743; No. 592)

A patent issued under the seal of his most Excellent Majesty King George the Second to John Hooper, apothecary and man midwife, Reading, was for "Medicine prepared in part Chymically and Compounded of severall ingredients, now comonly called by the name of Female pills." Hooper had to file a specification, but this is remarkable for its vagueness and evident intention to disclose little information:—

Of the best purging stomatick and anti-hysterick ingredients duly proportioned and made into a powder, and beat up into a mass for pills, with a sufficient quantity of a strong infusion made of the ingredients; and, when the same is made into pills about the bigness of a small pea, two or three are to be given to persons from seven years of age to fifteen, and three or four from fifteen years of age to seventy, every other night.

It is apparent that the patent examiners of earlier times were neither exacting nor even expert to permit such a specification.

Toothache Tincture

(Greenough's patent, A.D. 1744; No. 599)

The declaration of Thomas Greenough, apothecary, of the Parish of Saint Sepulchre in the City of London, relates to his invention of "A Tincture for Cleansing and Preserving the Teeth and Curing the Tooth Ach." This declares that "the said new invented tincture is prepared of the several materials and in the same proportions thereof as is contained in the receipt hereafter mentioned, viz:—

Take salt of tartar five pounds and an half; spirit of laurel, twelve gallons; bastard orrice root, twenty pounds; mint, twenty-four handfuls; roch allom, five pounds; thebaic extract, two pounds; cochineal, two pounds; oil of vitroil, five pounds and an half; guaiacum, thirty pounds; camphor, three pounds; sage, one pound; vinegar, two gallons; henbane seeds, two pounds; cloves, one pound and an half; cinnamon, one pound and an half; rose water, fifty gallons; Hoffman's spirit of myrrh, five gallons; cubebs, one pound four ounces; salt armoniac, one pound and an half; galls, three pounds; sassafras, three pounds; cinnamon water, five gallons; Peruvian balsam, six ounces; essence of lemons, four pounds; rose leaves, six



pounds; and Balanstone flowers, three pounds; mix them all together, and extract a tincture according to art.

Despite its "blunderbuss" characteristics, the tincture has the foundation of a myrrh and tannin mouth-wash, suitably flavoured and coloured.

Turlington's Balsam

(Turlington's patent, A.D. 1744; No. 596)

The specification of Robert Turlington, merchant, London, for his invention of "A Specifick Balsam, called the Balsam of Life," includes benzoin, storax, aloes and tolu: characteristic ingredients of the Friar's Balsam which has replaced the older preparation. The manner of making the said "Specifick Balsam" is set out:—

Take of storax five pounds, coriander seeds one pound, aloes two pounds and half, fennell one pound, mastick one pound and half, cardamums one pound and half, frankinsence one pound and half, anniseeds one pound, benjamin five pounds, angelica one pound, gum elemy seven pounds, cinnamon two pounds, guaiacum three pounds, cloves one pound, myrrh six pounds, nutmegs eight ounces, araback eight pounds, winter bark one pound, perne balsam five pounds, nettle seeds one pound and half, tolu one pound, juniper one pound, saffron one pound, mace four ounces, oyle eight pounds, Saint John wort eight pounds, marsh mallows four pounds. Distill and digest the same with a quantity sufficient of rectified spirits in a glass vessel, untill the same become a balsam, on a sand heat or slow fire, which said balsam is to be taken in any liquid, thirty or forty drops at a time, according to the nature of the patient's disorder, and to be repeated as often as occasion requires, which will cure the stone, gravel, cholick and inward weakness.

It is probable that the directions for digestion and distillation are intentionally incomplete, as also the final strength of the balsam.

Story's Worm Cakes

(Story's patent, A.D. 1759; No. 736)

The specification of Edward Story, apothecary, of the Parish of Saint James, Clerkenwell, in the County of Middlesex, is explicit as to the purpose and composition of his remedy. It explains that the applicant had exercised and followed the business of an apothecary for twenty years and "in the course of my application, labour, and study and experience, solely invented and made"

A New Compound Medicinal Remedy, called Rotulæ Anthelminticæ, or Worm-destroying Cakes, which I had brought to a surprising Degree of Perfection, for the Eradicating the Semina or Seed of Worms, and for the Effectual Destroying of Worms in the Bodies of Men, Women and Children, and for Cleansing the Stomach and Bowells from all Manner of Filth and Slime, and for Giving Immediate Ease in Cholicks and Gripes and preventing their Returns, and also for the Cure of Hydropical Disorders,

Yellow Jaundice, Agues, Hooping or Chin Coughs, Bloody Flux, and various other Indispositions, as a great many of His Said Majesty's faithful subjects had already happily experienced.

The ingredients are stated in Latin and include jalap resin, calomel, and antimony.

Essence of Peppermint

(Juniper's patent, A.D. 1762; No. 781)

It will surprise chemists to learn that "Essence of Peppermint" prepared by distillation was the subject of letters patent by a "Chymist and Apothecary" with the appropriate name of John Juniper, of Soho, in the City of Westminster, who claimed to be the sole inventor of "A New Medicine called Essence of Peppermint, which contains all the virtues of that Plant, and is an Excellent Remedy in Cholicks, Retchings, Sicknes, and all Disorders arising from Flatulency, and in other Disorders therein mentioned." The specification reads:—

Distill well-dried peppermint carefully, so as to prevent an empyreuma, and collect the oil. The oil thus collected must be purified with an alkaline salt put in the retort with it, digesting and distilling with a gentle heat, adding a proper quantity of water for that purpose. The oil being again collected, is to be kept for use. Take of this purified oil of peppermint a sufficient quantity to impregnate a gallon of pure alcohol; put the mixture in a retort, and distill with a balneo marie; to what comes over add the following:—Take two quarts of alcohol, extract of common mint, two ounces; digest them together in a tall bolt head; when cold, filtre for use.

The gourmands of the period would undoubtedly appreciate the relief accorded by the peppermint essence.

Other Eighteenth-century Patents

The latter half of the eighteenth century was retrograde in respect of medicinal patents though applications for patents were increasing in number. Over 1,000 patents were issued between 1772 and 1796, including the following:—

BURROW'S PATENT, A.D. 1772; No. 1008, for Velno's Vegetable Syrup. The "several Rare and Valuable Vegetables and Drugs" used are specified as "ecceprotic or milder purging plants" which are infused before adding "antivenereal and anti-scorbutic plants moderately bruised before expression."

GRUBB'S PATENT, A.D. 1777; No. 1158, is for a medicine containing "purging antimony" and salt of tartar in rectified spirit along with "aquila alba," balsam of Peru, guaiacum wood and "extract of cicuta" (no quantities being given in the specification). The description (which contravenes present-day law) states that the invention is for making "A Certain Medicine called Frier's Drops, for the Cure of Venereal Disease, Scurvy, Rheumatism, Stranguary, and Gleet, without any Electory or Pills, in every Stage of the Complaint, or without any Confinement or particular Regimen."



A.D. 1698 N° 354.

Medicine.

GREW'S PATENT.

WILLIAM THE THIRD, by the grace of God, &c., to all whome these Presents shall come greeting.

WHEREAS our trusty and welbelovéd NEHEMIAH GREW, Doctor in Phisick, hath by his petition humbly represented unto vs that he hath with much study and great charge invented "THE WAY OF MAKING THE SALT OF THE PURGING WATERS PERFECTLY FINE IN LARGE QUANTITIES AND VERY CHEAPE, SO AS TO BE COMMONLY PRESCRIBED AND TAKEN AS A GENERALL MEDICINE IN THIS OUR KINGDOM," and he having therefore prayed vs to grant him our Letters Patents for the sole benefit of the said Invention for the terme of fourteen years, and 10 we are graciously pleased to gratifie him in his request.

KNOW YEE, THEREFORE, that weo, being willing to cherish and encourage all lawdable endeavours and designes of such our subjects as have by their industrie found out usefull and profitable arts, misteries, and inventions,

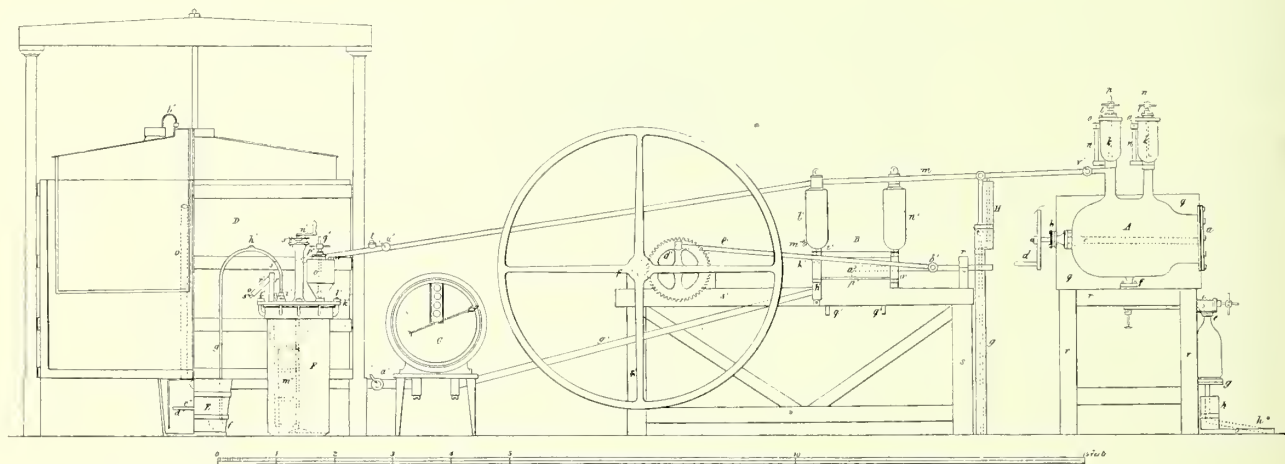
Opening paragraphs of the original patent for Epsom salts



GODBOLD'S PATENT, *A.D. 1785*; No. 1476, is for his Vegetable Balsam "for the Cure of Consumption and Disease in the Lungs." The list of herbs, drugs and gums is an example of polypharmacy with a predilection for home produce (including thistles, mallows, yarrow, plantain, nettles, cowslips and many other British plants with strawberries, red currants, black currants, damsons for flavouring as well as rosemary, rue, aniseed and cinnamon oil). Active ingredients are few but include "sena," storax and "mivabolano." The bottled product was to be kept "full three years before it is fit to be administered."

CHING'S PATENT, *A.D. 1796*; No. 2121, is distinctive in its precision of statement. The specification discloses the manner

STRUVE AND SWAINE'S PATENT, *A.D. 1823*; No. 4581. This was for "A Method of Producing and Preserving Artificial Mineral Waters, and for Machinery to effect the same." It was a progenitor of patents embodying mechanical constructions and also of foreign patents, being communicated by Frederick Adolphus Augustus Strewe [which should be Struve], Doctor of Physic, Dresden, and Edward Swaine, Merchant, Leipzig. The illustration on this page shows the carbon dioxide generating vessel (F); purifier (E); gas holder (D); gas meter (C); and pump (B) for compression or exhaustion of the aerator (A). The patent was prolonged for seven years in 1837 after a Privy Council inquiry at which evidence was given as



Struve's Aerated Water Plant

of making Ching's Worm Lozenges. The yellow lozenge contains "exactly one grain of *panacea mercurii alba*" (this being the alchemical name for calomel washed with alcohol and thus purified from corrosive sublimate). These were to be taken last thing at night. The brown lozenges (containing "extractum jalapæ" in addition) were to be taken in equal number first thing in the morning (the dose of each being one to six lozenges). John Ching, who was a "Chymist and Apothecary" of Launceston, later owned a business in St. Paul's Church Yard, London, now belonging to Butler & Crispe, Ltd.

Nineteenth-century Specifications

The first half of the nineteenth century is noteworthy on account of the revocation of patents for Seidlitz powders and quinine and the extension of Struve's aerated water patent.

SAVORY'S PATENT, *A.D. 1815*; No. 3594, was by Thomas Field Savory, of New Bond Street, in the County of Middlesex, Chemist, for the invention of "The Combination of a Neutral Salt or Powder which possesses all the Properties of the Medicinal Spring of Seidlitz, in Germany, under the Name of Seidlitz Powders." The patent was revoked in 1823 because the directions for making the powders were unnecessarily complicated and because the specification did not disclose that the ingredients were readily procurable in commerce.

FORD'S PATENT, *A.D. 1816*; No. 4087, is noteworthy for the clarity of the specification given by Robert Ford, Chemist, Crouch End, late of Barbican, City of London, for "A medicine for the Cure of Coughs, Colds, Asthmas, and Consumptions which I denounce 'Ford's Balsam of Horehound.'" This was still on sale a century later.

CONWELL'S PATENT, *A.D. 1822*; No. 4660, was for the manufacture of croton oil; but the patentee's claim "rests in having directed the application of it to internal use."

to the close imitation the artificial waters bore to the natural waters of the German spas.

PELLETIER AND DESPREZ'S PATENT, *A.D. 1833*; No. 6543, was revoked on the grounds that it was not new (quinine being isolated by Pelletier and Caventou in 1820). This illustrates the increasing stringency of patent examination.

An era of invention began when a provisional specification became the first step in protection by patent. This trend is shown by the following inventions in the two years 1854-56:—

Patentee	Invention	Patent Number
John Henry Johnson	Use of glycerin in cosmetics, etc.	No. 85 of 1854.
Arthur Hawker Cox	Pearl coating of pills	No. 866 of 1854.
Jules Denoual	Capsules	No. 824 of 1855.
William Henry Perkin	First aniline dye	No. 1984 of 1856.
Charles Humphrey	Use of "Paraffine" in hair oils and ointments.	No. 2945 of 1856.

The Original Poison Bottle

Patent No. 215 of *A.D. 1859*, for "Improvements in Bottles for Medicines and Poisons," by John Savory, of 143 New Bond Street, Chemist, and William Robert Barker, of the same place, Chemist, provides a fitting conclusion to this account of notable patents connected with medicine. The nature of the invention is declared in the following words:—

This invention relates to the manufacture of bottles used for medicinal or other purposes so as to prevent persons using the same taking poisons or strong medicines in mistake for other medicines. The outer part of the bottle may be formed of six, eight or more sides, and fluted vertically, horizontally or diagonally, or may be embossed, or otherwise raised on the outer surface, leaving a blank space for placing the label with instructions thereon, so that a person taking hold of it either in the dark, or thoughtlessly, must immediately find that the bottle is unusually strange to the feel of the hand.

The invention is thus the progenitor of requirements incorporated in later poisons legislation.



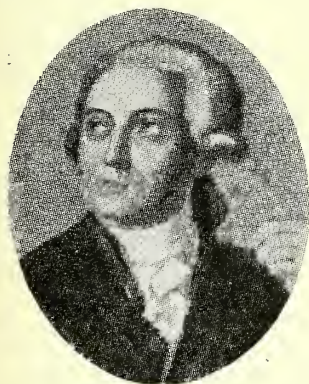
The Discovery of Oxygen

THE mysteries associated with fire have throughout all ages provoked the questionings of men in all stages of culture and at all periods in the development of mankind, as may be seen by consulting Sir J. G. Frazer's "Golden Bough" and his "Myths of the Origin of Fire." The part it plays in the life of the individual and of the community accounts for the importance attached to it by all who have contemplated the constitution of the world. It is not strange that ancient philosophers accounted it one of the elements out of which the world was made. The same may be said about the air we breathe, and accordingly the Greeks of old believed that the four elements were air, fire, water and earth. As to which should be considered of first importance there was difference of opinion, as appears from the fact that in the fifth century before the Christian era Heraclitus (c. 540-475 B.C.) said that fire must be the primal element because he thought it was the most complete embodiment of the process of Becoming, and it was that into which all things must finally be resolved. On the other hand, in the previous century Anaximenes of Miletus thought that the air with its universal presence and its necessary contribution to all life and growth must be the primary element.

Workers in prehistoric times, whether at the forge fashioning their tools and weapons or at the furnace producing their pots,

Leonardo da Vinci (1451-1519) had stated in respect of fire that it continuously consumes air and that a vacuum would be formed if further supplies of air were not available. Boyle's experiments and conclusions followed upon these observations of Leonardo and Paracelsus. A co-worker with Boyle, Robert Hooke (1635-1703), advanced further the development of ideas respecting the relations existing between fire and the air when, in 1665, he suggested that the material in air that supported combustion was the same as some substance in saltpetre. The experiments made by Hooke upon the effect of the air upon the action of the lungs led a London physician, Richard Lower (1631-1691), to ascertain the action of the air upon blood; he found that the effect was the conversion of the venous blood into arterial blood.

In the middle of the seventeenth century, when we think modern chemistry had its birth, the somewhat nebulous notions concerning the connexion of air and fire hitherto existing began to condense into something definite. In 1674 a young Oxford physician, John Mayow (1645-1679), influenced by Hooke's researches, became an enthusiastic experimenter upon the processes of respiration; the results of his work were published in 1674 as "Tractatus Quinque Medico-Physici quorum primus agit de Sal-nitro et Spiritu Nitro-aëreo." He showed that combustion is not supported by air as a whole



A. L. Lavoisier



John Mayow



Robert Boyle



C. W. Scheele

must have become aware of the essential connexion between fire and air. History yields but little indication of this practical knowledge previous to the third century, when it is recorded that Clement of Alexandria knew that some air was necessary for combustion. From that time this fact has been generally recognised. During the Middle Ages this knowledge was apparently not augmented. Throughout that period all matters that we should call scientific were practically taboo because of the acceptance by those who occupied the seats of learning of the teachings of Galen and his followers. Whatever was the reason for a thousand years' neglect of inquiry into the nature of the physical world, it was common knowledge that air was known to be indispensable for the sustenance of life and that the phenomenon of combustion was the result of the combined action of the fire and air.

The end of the fifteenth and the early years of the sixteenth centuries experienced the free and healthy soil of experimental investigation wherein were planted the seeds yielding our heritage of untrammelled research. Fire and air became objects of intensive examination and of speculation. Robert Boyle (1627-91) in his "Relation betwixt Flame and Air" concluded after his experiments with a mouse and a lighted candle that in some way breathing and combustion were similar processes, and he drew attention to the fact that Paracelsus (1491-1541) had expressed the view that the lungs in breathing used up some portion of the air and rejected a residue.

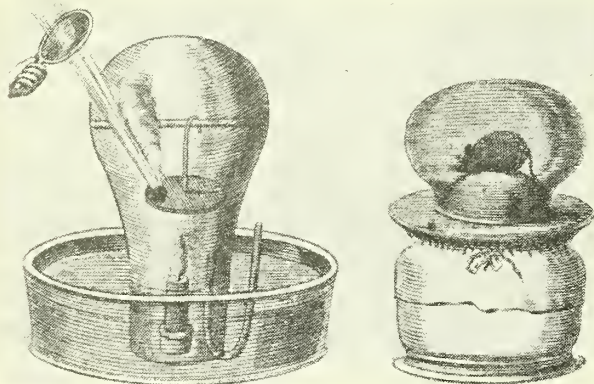
but only by a "more active and subtle part of it" which he called the "spiritus igneo-aereus." This, by well-devised experiments, he identified as being similar to the acid portion of nitre. The nitre-air, he said, was not combustible, neither could it inflame bodies. He looked upon his nitro-aereo-spirit as consisting of excitable particles. From the record of his observations on nitre, blood, the calcination of metals—which he said increased in weight because of the absorption of his nitre air, it is plain that Mayow discovered the agent of what we call oxidation, although he had not grasped the possibility of its being a separable constituent of air. His work did not attract much attention, and it does not appear to have come under the notice of those who immediately afterwards became workers in the same field of research. If Mayow had lived somewhat longer—he died when he was only thirty-four—he might have found that his hypothetical "nitro-aerial spirit" was indeed the primal element—the great sustainer of all life.

In the early part of the eighteenth century Stephen Hales (1677-1761), a clergyman having the cure of Teddington, carried out an extensive series of experiments on animal and vegetable physiology which ultimately were recorded in his "Vegetable Statics." From time to time his results were communicated to the Royal Society in papers of which one was "A specimen of an attempt to Analyse the Air by a great variety of chymico-statical experiments" (1727). He subjected to distillation the most varied substances and obtained



various gases, all of which he regarded as "air," but made no attempt to ascertain their characters, his interest being concentrated on their volumes and weights. A consideration of his records makes it plain that in one case at least he obtained the "air" we now call oxygen. We must therefore consider him to be the first to isolate that element, but without investigating the character of it.

Proceeding along this line of inquiry—the connexion existing between fire and air—we must look at the work of the pharmacist Carl Wilhelm Scheele (1742-1786), who was the first to obtain from common air what he called "fire-air" because it



Priestley's Experiments in Burning and Breathing

supported combustion, and who distinguished the residue of common air as "spoiled air." This "fire-air," obtained by several methods, he mixed with two or three parts of his "spoiled air" and found that in all respects it acted like common air. In his "Air and Fire" he says: "I have reported that I have found the 'spoiled air' lighter than the ordinary air. Must it not follow that the 'fire air' is heavier than our air. Indeed, I actually found that after I had accurately weighed as much 'fire air' as occupied the space of twenty ounces of water this was nearly two grains heavier than just as much ordinary air." This was written in 1775; but Scheele's laboratory notes, published by Nordenskjöld, show that Scheele obtained this air previous to 1773 when he called it "aer vitriolicus." Scheele's book was only published in 1777, consequently his work was unknown to Priestley and Lavoisier while they were carrying out their experiments.

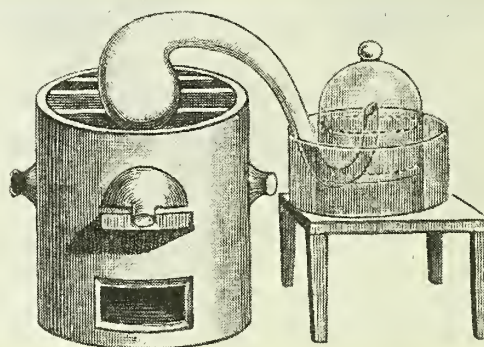
It must be noted that among the substances operated upon by Stephen Hales was nitre, which for centuries had been regarded of great importance because of its action in producing intense ignition. By the heating of this and the heating of the red oxide of mercury, both Hales and Scheele obtained a gas which the former did not ascertain was other than ordinary air, but the latter proved to be something different and named it, as we have seen, "fire-air." Hales collected it over water and Scheele in a bladder. This use of mercury oxide in the production of a gas compels the examination of a side-light on the history of the views held at different times on the character of fire. From the earliest days fire was known as a source of light and heat; it was employed accordingly. It was also known as an agent of destruction, and among adepts and wise men it was used as a purifying agent. An early indication that it produced other effects is found in the books attributed to Geber (Jabir Ibn Hayyan), who lived in the eighth century. The alchemists of that time were well acquainted with the operations of sublimation and distillation as well as with that of calcination—the heating of metals until they lost their metallic appearance. They also recognised that such things as lead increased in weight on calcination—a fact known to the Arabic adepts throughout the Middle Ages. This constituted one of the puzzles of all the experimentalists for generations. However, in 1489 Eck de Sultzbach asserted that it was true; and Cardan in 1553, in his "De Rerum Subtilitate," states clearly that the calx of lead weighs more

than the original metal. It was certainly known to Scaliger (1484-1558) and Caesalpinus (1519-1603). Sprat states that the matter was put to the test after the foundation of the Royal Society in 1660; and Louis Lemery said in 1709 that the increase in weight of lead, tin, antimony and mercury after calcination was known to everyone.

Jean Rey was the first to subject the matter to exact experiment, having been asked by an apothecary what was the cause of the increase in weight of tin and lead when they were calcined. The account of his examination and observations were published in 1630 in a pamphlet entitled "Essays de Jean Rey . . . sur la Recherche de la cause pour laquelle l'Estain et le Plomb augmentent de poids quand on les calcine." Having found that tin did increase in weight under the conditions named, he is convinced that the weight is due to the air having been attracted and attached to the metal. He further observes that beyond a certain point no more air is so attracted and when all is saturated it can take up no more. "Do not," he says, "continue your calcination in this hope; you would lose your labour!" He* was of opinion that it was the heavier portion of the air that was attached to the metals and that some more subtle parts escaped. Rey's work was overlooked until attention was called to it in 1775.

It is worthy of comment that the two men whose names are most prominent in the actual elucidation of the problem of combustion and its dependence upon some constituent of common air were men who not only became great experimentalists in chemical science but were also involved most unwillingly in political cataclysms. The one became an exile from his country because of social and political rancour (Priestley), and the other lost his life on the scaffold because of the envious hatred of his fellow citizens (Lavoisier). Each was a good example of the spirit of the country of his birth—the first imbued with a keenness of curiosity altogether insatiable, and only intent upon the satisfying of curiosity by the vagaries of presented opportunities after the manner of the spirit of the Englishman; the other prosecuting his researches with a definite aim, impelled along a certain course by the determination to seek proofs for a theory or against a theory after the fashion of a logical Frenchman. Such was Lavoisier.

Georg Ernst Stahl, the chief protagonist of the Phlogiston theory of combustion, was born in 1666, and died in 1734, and Joseph Priestley, the most noteworthy upholder, in this country, of that doctrine was born in 1733—in time, it would seem, to take into his keeping the teachings of Stahl, to which he reli-



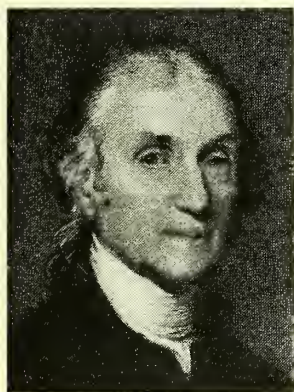
Lavoisier's Heating of Mercury in Air

giously adhered in spite of what to us appear the convincing proofs provided by his own experiments as to its untrustworthiness. The great versatility of his knowledge, his extensive reasoning powers and his insatiable curiosity combined to make him a staunch defender of a creed, at the same time that his remorseless search for facts made it impossible for him to ignore any new thing which came within his vision. Therefore we may understand in some measure how it came to pass that his great discovery of "dephlogisticated air," as he called it, in

* Alembic Club Reprint, p. 52.



support of his belief in phlogiston became the rock on which phlogiston foundered. No one has written with more frankness concerning the steps by which he was led to undertake his varied and various experiments than Priestley. It is necessary in considering his work to read his own writings, and in particular the three volumes of his "Experiments and Observations on Different Kinds of Air" published in 1774-75-77. It is in the second volume, recording work done in 1774, that appears the section headed "Of dephlogisticated air" giving an account of his discovery. By means of the use of a "lens of twelve inches diameter and twenty inches focal distance I proceeded with great alacrity to examine . . . what kind of air a great variety of substances, natural and factitious, would yield." Previously he had been provided with a "mirror of force" for the concentration of the sun's rays which he says was not entirely useful. With his new lens he made many experiments; the chief was that "on the 1st August 1774 I endeavoured to extract air from *mercurius calcinatus per se*,† and I presently found that, by means of this lens, air was expelled from it very readily. Having got about three or four times as much as the bulk of my materials, I admitted water to it, and found that it was not imbibed by it. But what surprised me more than I can well express was that a candle burned in this air with a remarkably vigorous flame." His suspicions were directed to the possibility that this new air might be of the nature of nitrous air—so he had to examine that question and he carried out the same experiment with red precipitate‡ to ascertain if there might not be some nitrous air to account for the new phenomenon. He further followed this line of inquiry, getting a guaranteed specimen of *mercurius calcinatus* from a Mr. Warltire, with which he confirmed his first results. From calcined lead he also obtained the same kind of air. Having satisfied, as he thought, "any moderate sceptic" and "being at Paris in the October following," he



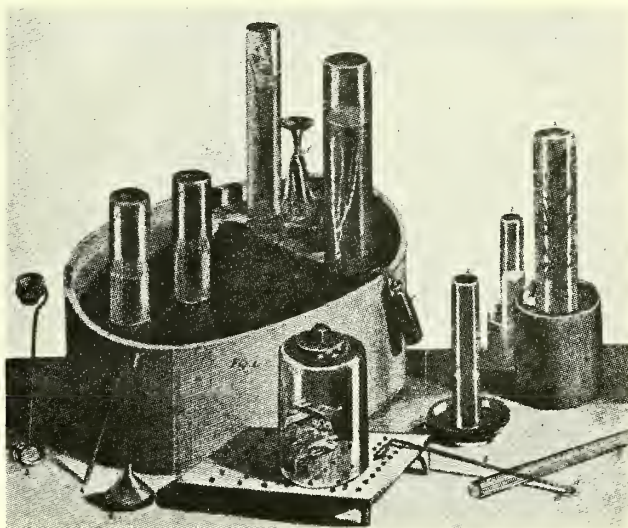
Joseph Priestley

got his friend Mr. Magellan to obtain for him "an ounce of *mercurius calcinatus* prepared by Mr. Cadet, of the genuineness of which there could not possibly be any suspicion; and at the same time I frequently mentioned my surprise at the kind of air which I had got from this preparation to Mr. Lavoisier, Mr. le Roy and several other philosophers, who honoured me with their notice in that city, and who, I daresay, cannot fail to recollect the circumstance." On his return home Priestley carried out a large number of experiments and investigations as to the obtaining the new air and ascertaining its properties, in some of which he used the *mercurius calcinatus* purchased in Paris. Although he had on August 1, 1774, procured the new air, which at that time he thought—to use his nomenclature—resembled "phlogisticated nitrous air," it was only in November of that year that he decided it was different from the "dephlogisticated nitrous air." In March of the following year he found that it supported respiration as well as and even better than common air. In a letter to Sir John Pringle on March 15, 1775, he says: "This species [of air] may not improperly be called *dephlogisticated air*." There is evidence to show that Priestley first obtained his "dephlogisticated air" in 1771, but he made no experiments of any importance with it until he got it from the *mercurius calcinatus per se* in August 1774.

† *Mercurius Calcinatus* of the Pharm. Lond., 1746, prepared by exposing mercury to a temperature of about 600° until it became a red colour.

‡ *Mercurius Corrosivus Ruber*, Pharm. Lond., 1746, prepared by dissolving mercury in nitric acid and heating until red crystals were formed.

The recently published life of Lavoisier by Dr. Douglas McKie§ contains so good and connected an account of Lavoisier's researches in chemistry (described in three chapters dealing specifically with combustion and calcination), Priestley's isolation and recognition of oxygen and Lavoisier's New Theory, that there is now no reason to refrain from recognising fully the distinctive parts these two experimentalists played in finding oxygen. Lavoisier's work on combustion and calcination began



Priestley's Apparatus for Collecting and Testing Gases

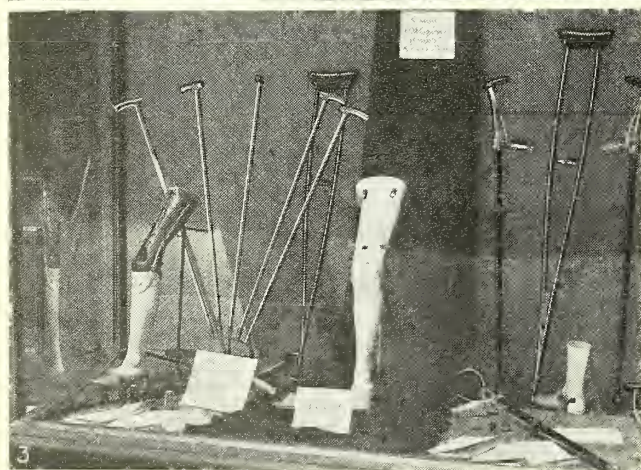
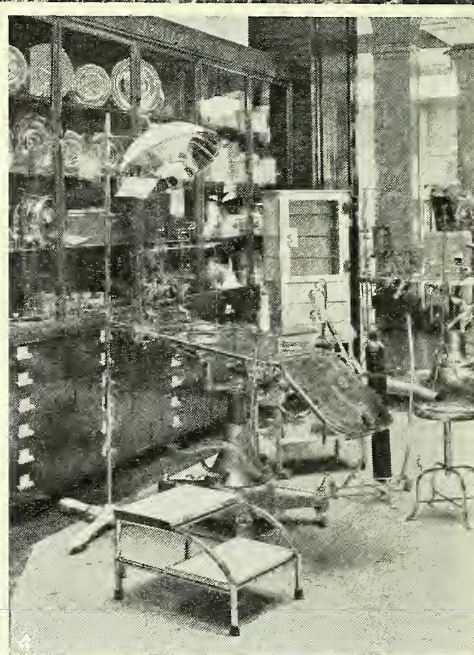
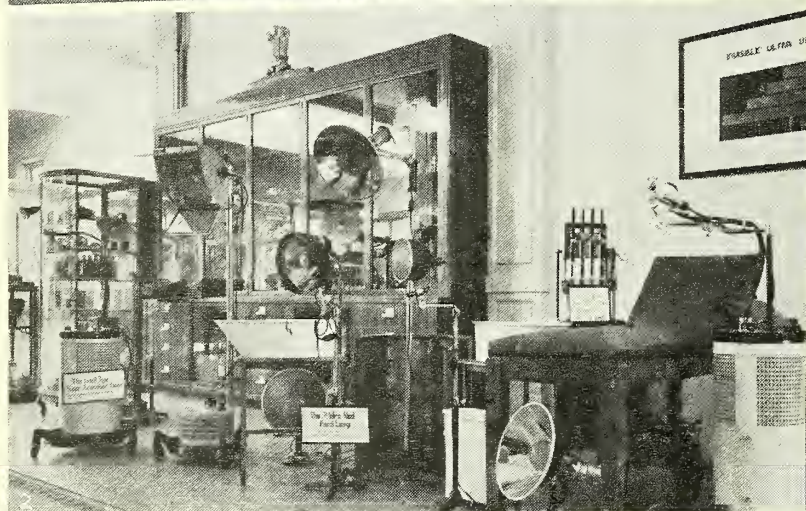
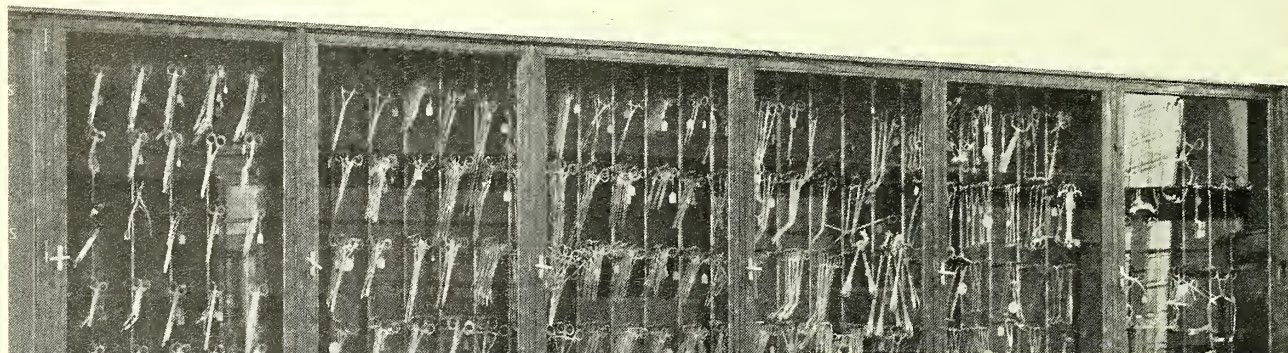
in 1772 with his collaboration with Macquer and Cadet in their attempts to burn the diamond. He followed this by experiments in obtaining elastic fluids by heating various substances after the manner of Hales, Black, MacBride and Priestley, and on the calcination of metals by means of a burning glass. In his work on calcining metals he found that there was a limit to the process in a limited amount of air, in which he later discovered he had been anticipated by Jean Rey. During 1773 he was occupied with his calces, air and the fixed air (CO₂) of Dr. Black. In his mind there was a confusion between "fixed air" and that portion of common air which was the active agent in combustion and calcination. As we have already seen, Lavoisier was made acquainted by Priestley in October 1774 with the results obtained by the latter in his experiment in the previous August upon the *mercurius calcinatus*. Lavoisier repeated Priestley's experiment in March 1775, and at first thought the released air was "fixed air"; but as it did not precipitate lime water he concluded it was common air with "a little of the nature of inflammable air." During 1776 and 1777 he prosecuted his work upon the properties of Priestley's "dephlogisticated air," especially in regard to its respirability and the maintenance of combustion of lighted candles. He noted in 1777 that a burning candle converted only "the pure part" of common air into "fixed air," and showed that air consisted of two elastic fluids, the "pure part" and a non-respirable part. The crucial experiment was his famous experiment in which he calcined mercury in a closed vessel for twelve days. The residual air was mephitic.¶ The calx he had obtained was then heated in a retort and the expelled air collected over water; this was respirable, and when mixed with the residual mephitic air the mixture had all the properties of common air. Lavoisier also had, after having received Priestley's information, discovered the vital constituent of air which at a later date in the same year (1777) he renamed "*principe acidifiant* or *principe oxygene*, the acidifying principle or the oxygen principle (*debs* = acid, *γεννάω* = I beget)."

§ Antoine Lavoisier, by Dr. Douglas McKie. (London, 1935.)

¶ Now known as nitrogen, but named "azote" by Lavoisier to denote its non-respirability.



MODERN SURGICAL EQUIPMENT



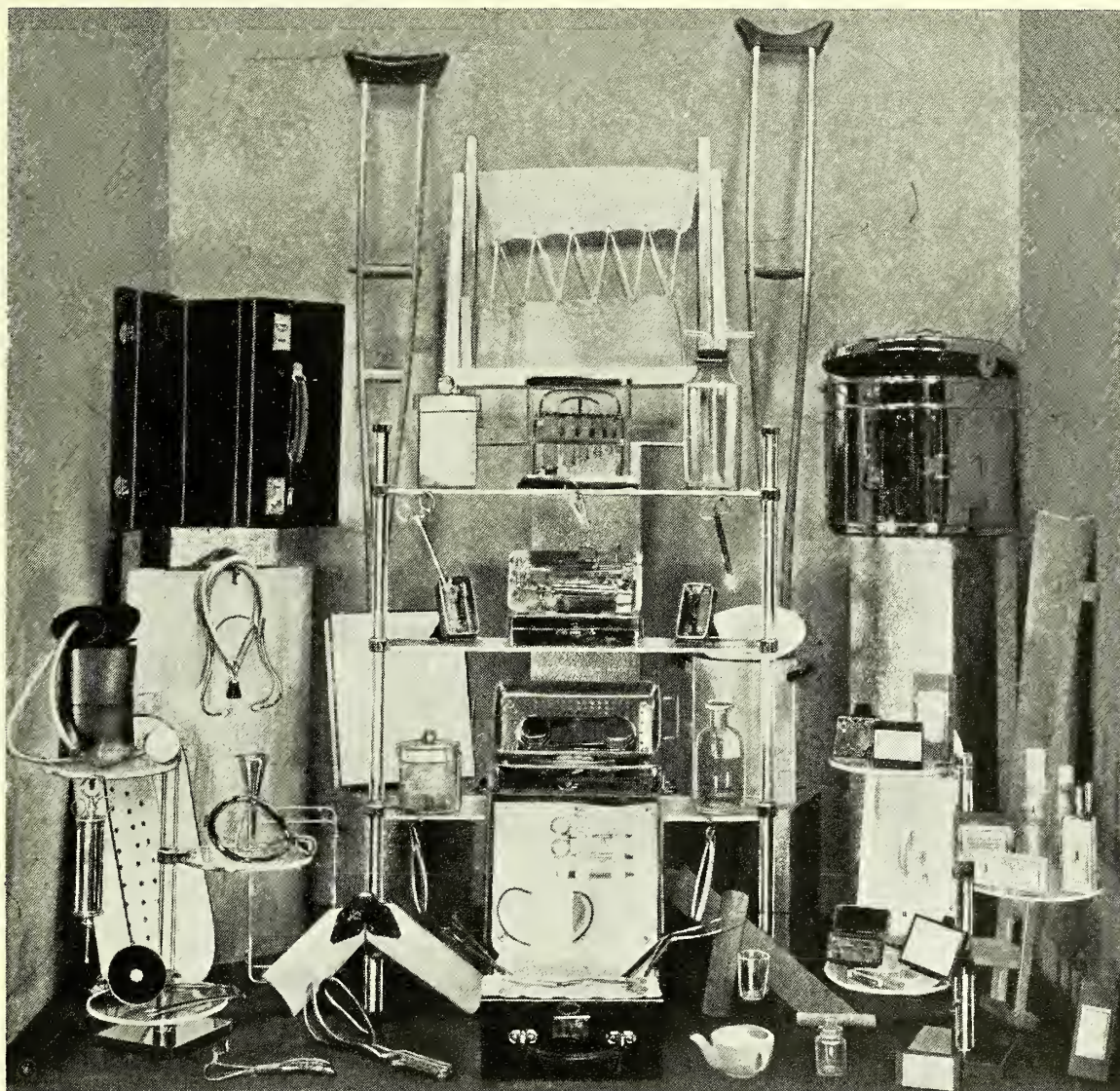
1. Scissors and forceps
2. In the electro-medical department

3. One of the window displays
4. Operating theatre equipment

THE establishment of John Bell & Croyden, Ltd., Wigmore Street, London, W.1, is undoubtedly best known to chemists the world over through its pharmacy, yet it deserves to be equally well known for its surgical instrument department. The part of the building devoted to this branch of business has lately been rebuilt, and there are sections devoted to general hospital equipment, electro-medical apparatus, acoustic instruments and a series of fitting rooms. The last-mentioned have been specially designed to render the patient at ease in unfamiliar surroundings. The staff is one of specialists, i.e., their knowledge is the result of training. The value of this will be appreciated when it is realised that at present there is nothing to prevent any person from setting up in business as a supplier of surgical instruments and appliances. But to revert to Messrs. John Bell, the illustrations on this page give some idea of the large amount of apparatus on view; there are, of course, in addition showcases devoted to small instruments such as ophthalmometers, syringes, glassware, enamelware, and so forth.



Opening a Surgical Department



THE supplying of surgical instruments to hospitals, medical men, nurses and the public generally is a branch of pharmaceutical business which appears to have been greatly neglected by the majority of chemists. To draw attention to a few of the advantages it may be pointed out that it is not necessary to carry a large stock of articles; profits are good and there is practically no competition from other trades. Further, where a chemist is desirous of cultivating the professional side of pharmacy no branch of his business could be better suited to the purpose. In most areas there are the smaller types of establishment, usually known as the cottage hospital, and nursing homes. One of the first things to do is to get in touch with the matron and offer to obtain any instrument or apparatus she may require by return of post or by passenger train. Doctors and nurses should be approached in a similar manner. As a rule the above mentioned persons are keen buyers and it may be that at first the chemist will not secure quite such a margin of profit as he

desires and is entitled to, but, if he can secure their custom, his service will be depended on and debates on prices will become of minor importance. Another thing, it is through the doctors and nurses that will come recommendations to their patients. The approach to the general public should be made through window and counter displays, and that such a show can prove an attraction has been the experience of a number of chemists up and down the country. It is not suggested that chemists need concern themselves with highly specialised operating instruments, amputation sets, and so forth. Incidentally, the branches of one of the chain stores are never without a display of instruments and dressings in one of their windows. Certain wholesale houses are specially anxious to assist chemists in cultivating this class of business and to this end one of them issues a list with a specialised surgical section in which a real effort has been made to convey adequate information. In addition, surgical problems receive interested expert attention and suggestions are always available for those



in doubt. The window display on page 765 is a selection of the type of instruments and apparatus in which chemists should find possibilities of business, those shown being:—

Steriliser forceps.
Crutches, padded and unpadded
Leg and arm splints.
Gooch splinting.
Doctor's bag, empty.
Nurse's bag, fitted.
Sterilising drum.
Back rest.
Enamel iron steriliser for instruments.
Nickel-plated steriliser for instruments.
Hypodermic syringes in sterilising case.
Stethoscope.
Head mirror.

Dental mirror.
Sphygmomanometer.
Schimmelbusch mask.
Percussion hammer.
Nickel-plated ear syringe.
Spencer Wells (artery) forceps.
Midwifery forceps.
Tooth forceps.
Mouth gag.
Sponge forceps.
Dental wool forceps.
Towel clip.
Needle holder.
Hypodermic needles.
Merson's silk and catgut.
Dressing scissors.

For those who prefer to commence on a more restricted scale an excellent display can be made with the aid of druggists' sundries already in stock, as the illustration below shows.

If the more ambitious scheme is decided upon, obviously a fitting room becomes necessary, and in any case such accommodation is desirable for the supplying of belts, trusses and elastic hosiery. These articles are almost without exception

personal to the purchaser, and thus give the chemist an opportunity to obtain the customer's confidence, which cannot do other than have a stimulating effect on the sales in other departments of his business. The fitting room need not be very large, and in many cases could be made by partitioning off a part, say 9 ft. by 6 ft., from a larger room. It is desirable that such a room be fairly soundproof, since every effort should be made to put the customer at ease. To this end an electric or gas stove should be installed so that the room is well warmed in damp or cold weather; the lighting should be of a soft rather than a glaring character. A carpet and a couch complete the furnishing. If possible it is desirable to have lavatory accommodation nearby. So soon as the extent of the business will allow, it is advisable to train a female assistant, since ladies prefer to be attended to by one of their own sex, and children are generally more amenable to a lady than a man.

Owing to the perishable nature of many instruments and appliances, particularly rubber goods, it is preferable not to carry a large stock of some lines, and, again, elastic hosiery and so forth has to be made to individual sizes, but manufacturers always treat such orders as "urgent."

The articles used in the window displays are by Britton, Malcolm & Waymark, Ltd., and the transparent display stands by J. C. King, Ltd.





From a Physician's Collection

BY the courtesy of Dr. Donald S. Murray of Stratford-on-Avon we have been privileged to select for illustration representative specimens from his extensive collection of pharmacy jars and mortars. We are inclined to think that ancient pottery and bronze show to greater advantage in a house than in a museum: in any case, Dr. Murray's treasures are delightfully placed, and we are glad to have this opportunity of making brief notes on those illustrated, most of which will be found on pp. 768-769.

The first group (p. 768) consists of Italian specimens. The two flask-shaped jars for medicated waters are decorated in polychrome and have coats of arms beneath the labels. Of the three syrup jars with spouts, the centre one, dating from the seventeenth century, is in polychrome with medallion of saint, cross, skull and mitre; the other two are richly decorated in yellow and blue.

In the second group are seven mortars. Those in the back row are of Italian bell-metal, with various designs. In front will be seen two Dutch mortars. One, dated 1590, is of brass with inscription "LEEFTE VERVINT A LEDINCK" and plain handles: the other is of bell-metal with handles representing dolphins, dated 1605 and bearing the inscription "LOF GODT VAN AL. A°." The other one in the front row is of English bell-metal with the Tudor rose and crown.

The third group comprises two Italian jars, each 12 inches high, decorated above the labels with chalices and their covers, and having beneath each label the cross and "A.D.," possibly indicating the name of the pharmacy or the proprietor.



In the fourth group are three large and handsome jars of Italian ware. The centre one is decorated in light blue on a white ground. The other two are syrup jars, inscribed respectively "MELL VEOLAT" and "SYR. DE. CORT. CITR.," they are designed in many colours and represent allegorical subjects.

The fifth group is an unusually attractive one. The specimens at each end are syrup jars with labels at the base, and underneath the initials "C.T." and the date 1745. Each bears a coat of arms, two castles and two stars surmounted with a crown. They are coloured yellow, blue and brown. In the centre is a Bristol Delft pill pot with square base; the lower part of the pot has green acanthus leaves. The other two pill pots are designed with floral decorations in colours: one is labelled "P. SINE QUIBUS" (i.e., *Pilula (or Pilulæ) sine quibus esse nolo*), an early kind of "general utility" pill containing aloes, rhubarb, scammony, etc. The second bears the lettering "P. TURIS MA." Flückiger and Hanbury's "Pharmacographia" gives "Thus masculum" as a synonym for olibanum; we may thus suppose that the jar was intended for pills containing this now obsolete medicine.

Turning to the opposite page, there appears at the top a group of five Italian jars. Above each label is the letter F, and below is the letter C, probably (as in Group 3) referring to the name of the owner or the pharmacy. The jars are decorated in blue—three with birds in the lower part and two with leaves throughout.

The seventh group consists of two rows. The upper row is designed in blue, and includes the interesting "THER. ANDRO." jar. The lower row comprises two Lambeth Delft drug pots with plain blue decoration, and a large, lidded "ELECT METHRIDATI." jar with peacock and cupid, also in blue.

The eighth group shows twelve specimens. In the upper row, consisting of English ware, will be seen an "OL. VIPERS" jar in the left corner. The second row is of Italian origin. One example is labelled "HIERA PICRA," and above the label has the Cross, "I.H.S.," the three nails, and "A.B." In the lower row are three English Delft jars. This and the seventh group are part of the selection lent by Dr. Murray to the New Place Museum, Stratford (C. & D., March 21, p. 341).



The last group consists of three blue Delft jars decorated with peacocks and cupids.

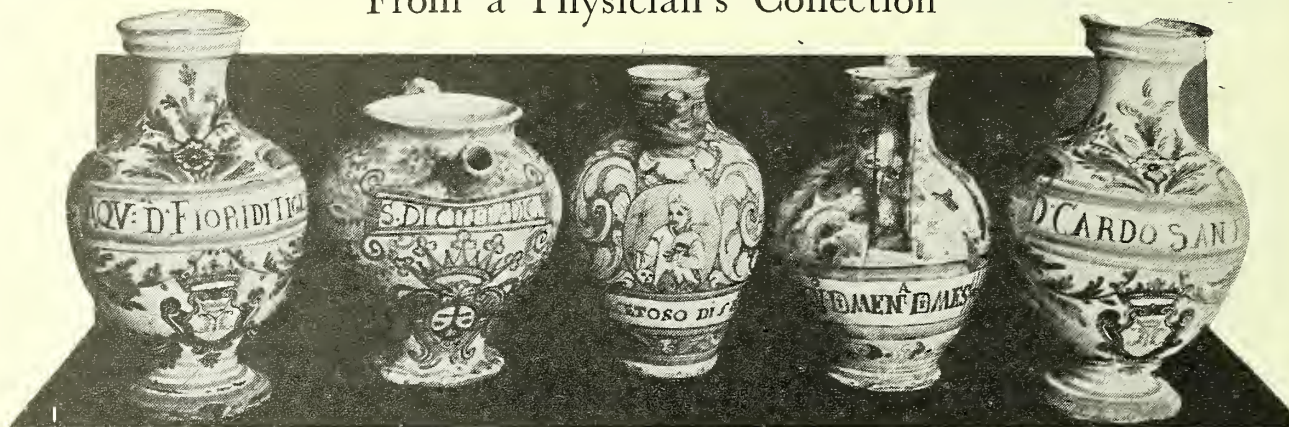
The illustrations given in the text of this article show, first, three jars of differing craftsmanship forming, nevertheless, a harmonious group. The one in the centre is decorated with a crude face and body in dark blue and violet; the other side has a date palm. It is probably Spanish showing Moorish influence, and of very early date. The one on the left side (blue decoration on white centre) has a shield surmounted with helmet and coat of arms. The shield has a yellow chevron with yellow bar on either side and half a figure of a man in blue. That on the right side shows a mythological figure in blue on white ground. It is Spanish, early eighteenth century.



The next group comprises three Italian jars. The centre one is Savona and is of early date. It is decorated in blue, yellow and green, with a female figure, and is labelled "AQ. ABSITIA." Those on the left and right are richly decorated in blue, yellow and green with mythological figures. One is labelled "v. COMITISSO"—the ointment of the Countess was a remedy for itch—and the other is inscribed "DIA: PRUNIF. FEN."

Finally, there are two large vase-shaped Italian jars decorated with birds and leaves in blue and violet. One is clearly labelled; the other, with Madonna and Child, bears the original paper label, which is not now decipherable. We congratulate Dr. Murray on the possession of this notable collection.

From a Physician's Collection



From a Physician's Collection



*A description of
these two pages is
given on p. 767*



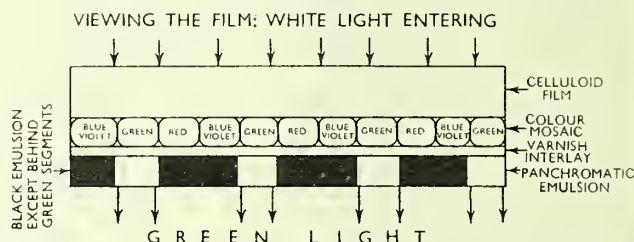
Colour Photography

IT was the discovery by Sir Isaac Newton that white light was a combination of colours (now termed the spectrum) followed by the further discovery—by Clerk Maxwell—that practically any colour in the spectrum could be obtained from varying combinations of three primaries—blue-violet, green, red—that made the ultimate attainment of practical colour photography possible. Take three pieces of glass (blue-violet, green and red), hold them, grouped together against a white light, and the light that will be transmitted through them will be white. And yet combinations of these three will produce every colour observable by the human eye. On this simple fact is based what is known as the “additive” systems of colour photography. The above-mentioned colours are the true primaries: the colours popularly but erroneously taught as the primaries (blue, magenta-red, and yellow) are known to science as complementary colours.

Outline of Additive Principle

Most of the additive systems of colour photography are developments of the principle embodied in the plates first marketed by the brothers Lumière so far back as 1907. The positive colour transparencies (as distinct from colour prints) obtainable from the additive process are strikingly beautiful, and present indications are that it will be one or more of the adaptations of this process (such as Agfa, Dufay or Finlay) that will eventually become most popular with the amateur. The outline, then, of the additive principle is as follows:—On the celluloid base of the film is imposed a colour mosaic. (The method of imposing the mosaic and its nature differs according to the methods used by the individual adaptors—and will be dealt with later). This colour mosaic is composed of the three primaries—blue-violet, green, red—in infinitesimal segments. The mosaic is of so fine a grain that the human eye cannot discern the individual segments and the general effect of the film if it were held to the light after the colour mosaic has been imposed, would be, theoretically, white transparent film. It will be appreciated that all the possibilities of the spectrum lie dormant on that film, but at the moment, their equality of status means a state of neutrality, or “whiteness.” The colour mosaic is covered by a thin layer of waterproof varnish—and this, in its turn, serves as the base for the photographic emulsion—which is panchromatic in nature and thus practically equally sensitive to all colour values. The film is exposed with the celluloid base facing the lens—not the emulsion side. Let it be supposed that an exposure is made (for the sake of simplicity) of a green vase against a red background. It will be obvious that the green light reflected by the vase, will, on reaching the colour mosaic, pass sympathetically through the green segments of the mosaic and thus register its impression on the panchro-

red of the background. Thus, viewed now against the light there is not only a negative but also a complete reversal of colour. The next step is designed to and quickly remedies this state of affairs. The film is placed in a reversing bath—which



dissolves the blackened silver in the emulsion behind the green of the vase and the red of the background without destroying the sensitive-to-light quality of the emulsion. Now the film is exposed to daylight and it is then redeveloped. The parts of the emulsion that were not affected by the exposure on the vase and background will now be black and a complete reversal of the earlier condition obtained. This revised state of affairs is explained by the above diagram taken from a section of the “vase” part of the film.

That the foregoing is a simplified explanation. It does show how the gradations of colour are obtained, but it is not difficult to imagine how, by leaving both green and red segments open and blotting out the blue-violet, the intermingling of the two first-named colours will produce a yellow—and so, the colours of the mosaic being released or hidden in always varying proportion, the range of the whole spectrum (as it is visible to the human eye) is the logical possibility.

ADAPTATIONS ANALYSED

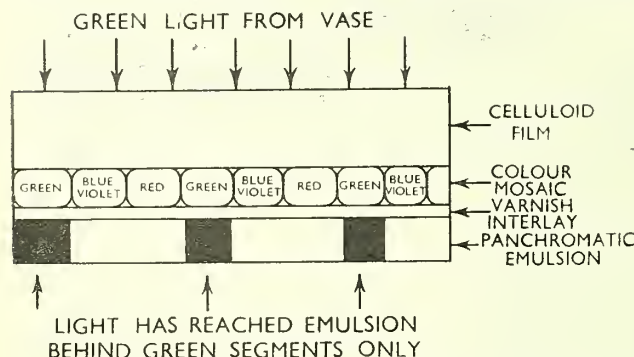
On the whole, so far as the additive processes are concerned they appear to vary mainly in the composition of the colour mosaic. However, below are given details of representative makes and the methods they adopt.

Lumière Autochrome.—A flexible celluloid support is coated, very delicately, with an adhesive. This is then covered evenly with microscopic starch grains—previously dyed in even proportions with the three primaries. Each coloured particle is about one fifteen thousandth of an inch in diameter, and a half-plate film has about 120 millions of these grains rolled on to it under great pressure. The dyed starch grains are then covered with the waterproof varnish and on the varnish the special panchromatic emulsion. A yellow filter is needed and is supplied by the makers.

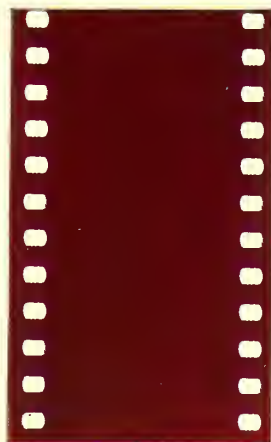
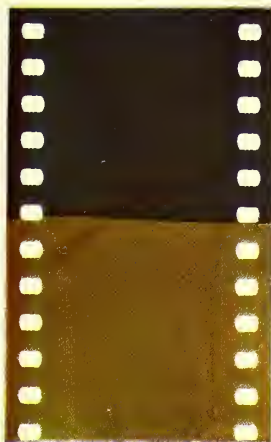
Agfacolor.—Similar to preceding with the exception that the dyed grains forming the mosaic are gum and not starch. With the latest ultra-Agfacolor film no filter is needed.

Dufaycolor.—A filmbase of non-inflammable material is over-printed with a very fine pattern consisting of alternating blue-violet and green squares plus red lines (called the “réseau”). The pattern is reproduced 500 times per inch. A colour reproduction of this method of preparing the colour mosaic accompanies this article and so a brief description of the ingenious way in which it is obtained would not be out of place:—The base is first coated with a thin layer of blue-violet collodion—then a set of greasy ink lines is overprinted at an angle. The dye between the ink lines is then bleached away and another dye bath colours the bleached part green. The first ink is then washed off and another set of ink lines printed at right angles to the first. A second bleaching now removes blue-violet and green where there is no protective ink covering and the resulting clear spaces are finally dyed red. No filter is required with Dufaycolor when used in daylight.

Finlay Colour.—This process differs quite considerably from those already mentioned and requires rather more special apparatus. A plate camera (but not a special camera) is essential. There is also required a special dark slide which will hold a



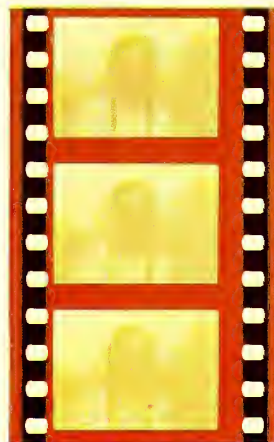
matic emulsion—but will be rejected by the blue-violet and red segments. Likewise, the reflected light from the red background will pass through the red squares but will be rejected by blue-violet and green. After the first development the emulsion is black behind the green of the vase and behind the



GASPARCOLOUR MOTION PICTURE FILM

Left : The three-colour positive film before exposure. The blue emulsion side has part of the blue scraped off revealing yellow emulsion beneath. The magenta emulsion is on the other side of the film.

Below : The three layers of Gasparcolour film printed separately, illustrating the subtractive principle of colour synthesis. Finally the three layers printed one over the other. At the side is shown the sound track.

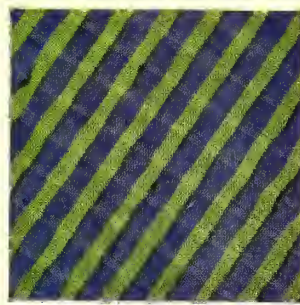


PHOTOMICROGRAPHS of DUFAYCOLOUR RÉSEAU

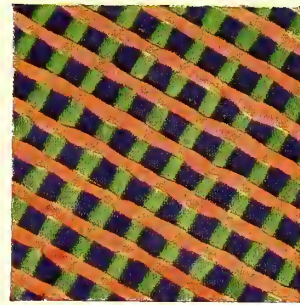
Magnification $\times 100$ Linear



(1) Base dyed blue, then over-printed with greasy resist in lines.

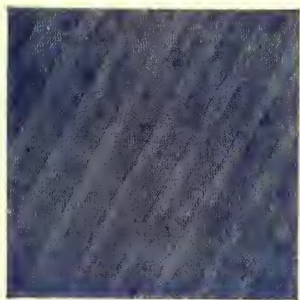


(2) Blue bleached out.

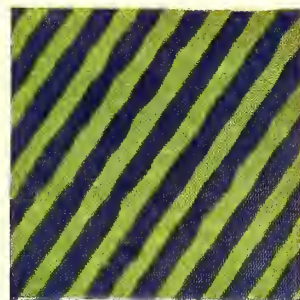


(3) First resist washed off and reprinted in lines at right angles to the first set.

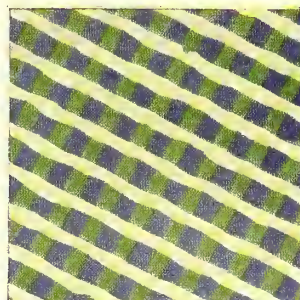
(4) First resist washed off and reprinted in lines at right angles to the first set.



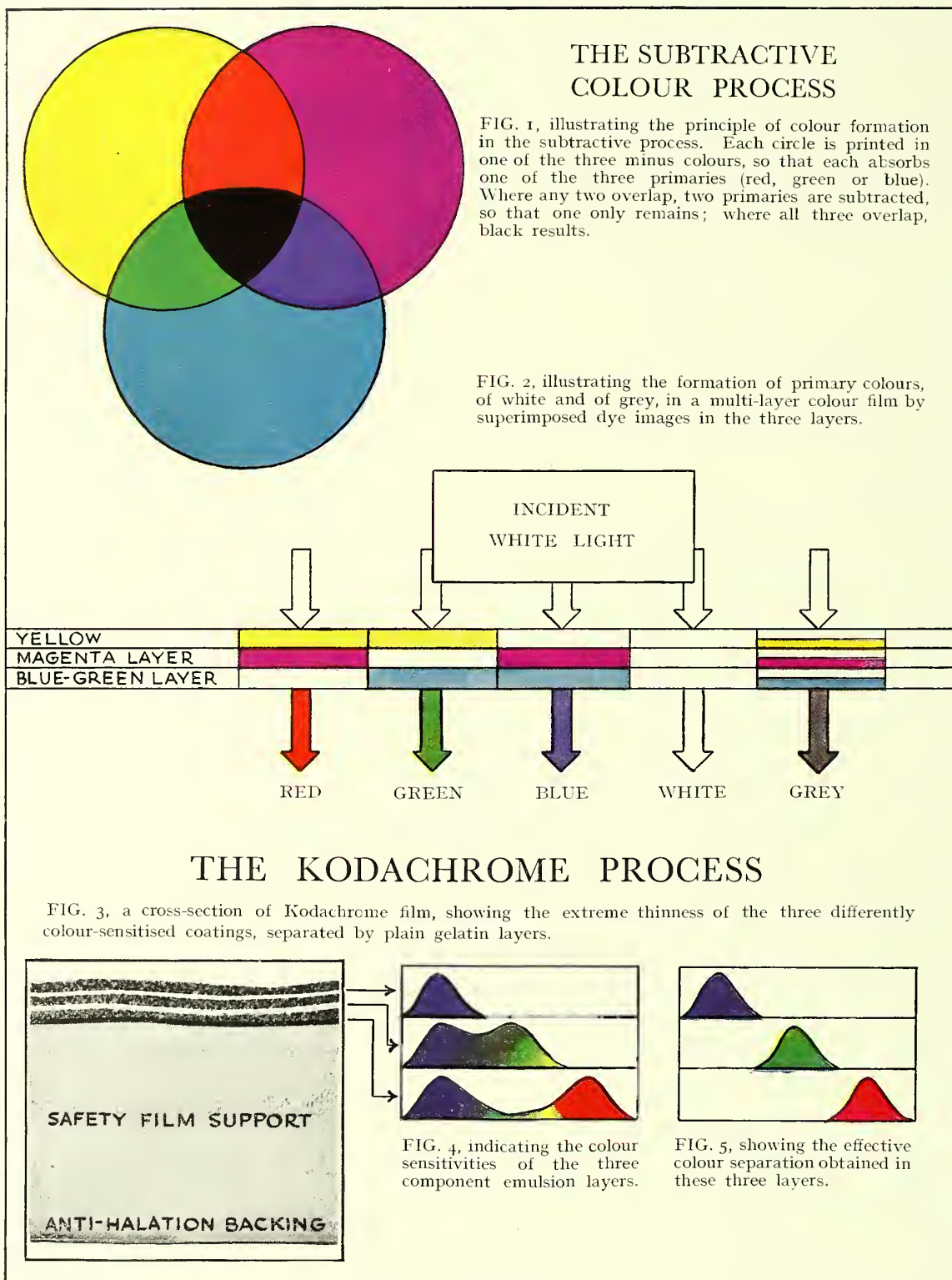
(5) First resist washed off and reprinted in lines at right angles to the first set.



(6) First resist washed off and reprinted in lines at right angles to the first set.



(7) First resist washed off and reprinted in lines at right angles to the first set.





panchromatic plate and a Finlay taking screen; a Finlay viewing screen the same size as camera's negative; recommended positive plates where positive plates and viewing screens are bound together, or positive colour screens where they are not bound together. The Finlay method is as follows: The colour mosaic is printed as a pattern of very tiny squares on a separate glass plate known as the "taking screen." This is placed in the special slide with its printed mosaic side in contact with the emulsion of the panchromatic plate and the two are held together by strong springs. The object is then photographed and the negative developed in the usual manner. The resulting negative is in appearance similar to the ordinary monochrome negative until examined under a powerful magnifying glass when it will be seen that the image consists of thousands of tiny squares of varying density. It is now necessary to make contact transparencies. In other words—to print the negative on to another plate to obtain a transparent positive. Finally, this transparent positive is clipped on to a Finlay "viewing screen" on which the colour mosaic is repeated and, when correctly in register, the finished picture may be seen. A special filter is necessary with the Finlay process.

Outline of Subtractive Principle

The subtractive principle is based on the interplay of the already mentioned complementary colours and is the only method whereby the colour print as distinct from the colour transparency is obtained. A thorough understanding of what is meant by "complementary colour" is absolutely essential and with this end in view the three pieces of glass stained with the primary colours—blue-violet, green, red—will again be useful. Again hold the group up to a light. Then take away the blue-violet section. The complete spectrum is now, as it were, unbalanced, only a part of the complete whole—and the result seen now is a combination of the red and green—making yellow. Thus yellow is spoken of as the complementary colour to the primary colour of blue-violet as yellow is the colour of the spectrum when denuded of blue-violet. Without primary red there is the complementary blue-green: without primary green the complementary is magenta-red. Thus we have the following list:—

Primary	Complementary
Blue-violet.	Yellow.
Green.	Magenta-red.
Red.	Blue-green.

Possibly an explanation of Colour Photos, Ltd., method of making their Vivex colour prints will most clearly explain the subtractive principle. In the method three negatives are taken—each with a filter corresponding to one of the three primaries. Let it be supposed that in this case the subject is a red vase, standing on a blue table cloth with green curtains in the background. The first negative—taken with the blue-violet filter—admits the blue tablecloth which registers on the plate in its correct value. The green filter admits the green curtains: the red filter the red vase. Thus we have a set of three negatives with the three primaries registered on the emulsion in their correct weights and values. So far, so good—but the colour print must be reversed. On the red negative where the red vase stands boldly forth, the ensuing positive will reverse the position if printed in red. Therefore the prints are made in that complementary colour related to the primary colour of the filter used in making the negative. It follows that when the transparent colour prints are made from the negatives and super-imposed one over the other in register (which is the method used in making Vivex colour prints) they are printed in the following complementaries—and, incidentally, in the following order:—

Negative obtained through primary filter	Printed Complementary Colour
Blue-violet.	Yellow.
Green.	Magenta-red.
Red.	Blue-green.

This principle is used not only in the making of photographic colour prints but also by letterpress three-colour printing colour gravure and all such printing processes which depend on the forming of the spectrum by the complete range of complementaries.

ADAPTATIONS ANALYSED

Colour Photos, Ltd.—This is mainly dealt with above. Three negatives taken through filters, three prints are made in complementary and superimposed together as one on white paper base. Snapshots are impossible without a special and expensive camera. This is a very beautiful process but more suitable to the high-class professional than the amateur.

Kodachrome.—This is the new process of Kodak, Ltd., and is available on 16 mm. cine film. It is believed to be the only practical subtractive process in which one, and the same film both effects the colour separation in the camera and provides the colour print by projection at the same time. For a description of the film itself, the following is quoted from an article by E. R. Davies, B.Sc., F.Inst.P., F.R.P.S., Superintendent of the Kodak Research Laboratories, which appeared in "The Photographic Journal" (by whose courtesy we have published the illustrations) for April 1936:—"Fig. 3 shows a cross section of the film greatly enlarged. The section was cut after the film had been exposed and developed to give silver in all three of the light-sensitive layers, so that they might be readily distinguished from the layers of gelatin that separate them. The diagram gives a very good idea of the extreme thinness of the coating. The film itself is of the thickness ordinarily used for 16 mm. film. This is about 5/1000's of an inch, and it is seen from the section that the total thickness of the five layers is only a small fraction of this amount. Their total thickness is, in fact, no greater than that of the emulsion film used for ordinary black-and-white cinematography. The film is backed with a layer of jet black similar to that used with ordinary Cine-Kodak panchromatic stock, to prevent any halation. The two layers of gelatin serve a double purpose. They help to isolate the chemical reactions that take place in the different layers during the conversion of the silver images to transparent dye images, and they allow us to restrict the light received by any one layer to the colour appropriate to that layer, by the inclusion of a suitable dye in the gelatin layer immediately in front of it."

"The special spectral sensitivity of the emulsion layers is represented in Fig. 4. Next to the base is a panchromatic emulsion that has a very low sensitivity to green light. Its response to green can be reduced to negligible proportions by incorporating a suitable dye in the layer of gelatin which is coated over it. Next comes an emulsion layer sensitive to blue and green only. Only green light affects this layer because a yellow dye in the layer absorbs all the blue light. As a consequence of this, of course, no blue light can reach the panchromatic emulsion of the bottom layer, so that this responds to red only. The top layer consists of an unsensitised emulsion which records the blue component of the incident light. The effective sensitivities of the layers are, therefore, as represented in Fig. 5. The top layer responds to blue light only, the middle layer to green light, and the bottom layer to red light only. Between them they cover the whole of the visual spectrum. Thus, when the film is exposed in the camera and an image of the scene photographed is formed on it, this is automatically broken down to give three separate records corresponding to the three primary colours."

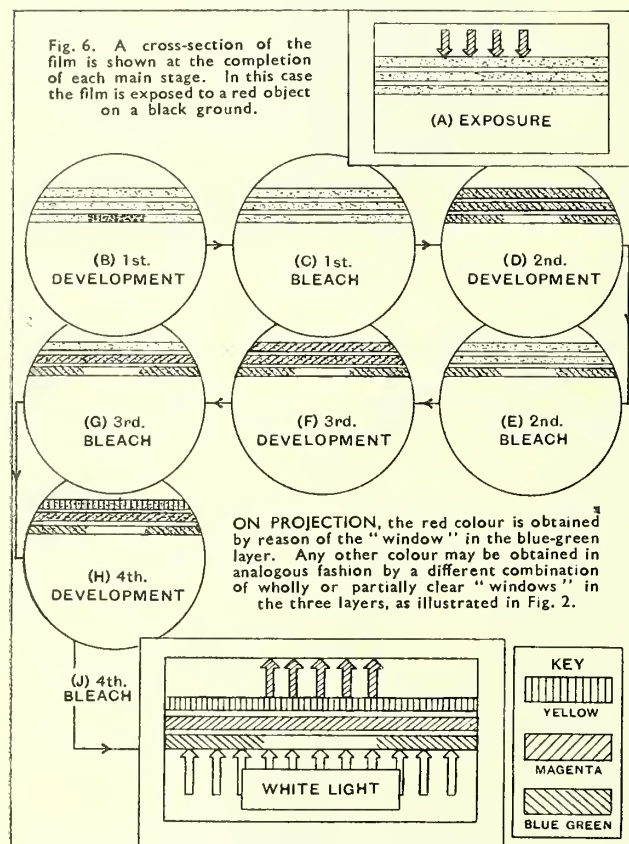
Processing consists in converting the latent images formed in the three layers into dye images in colours complementary to the colours to which the layers are sensitive.

The conversion is carried out by dye-coupling developers which form a complementary colour dye in exact ratio with the amount of silver developed. When, subsequently, the silver is removed the image in dye only remains. In considering the diagram "Processing of Kodachrome Film" one has to imagine a section of a red line on a black background being developed. (a) Exposure, represents the three layers of emulsion with the red light passing through until it registers its impression on the bottom layer and so renders the film developable. The film now passes through a series of processing baths represented by Fig 6, the continuous series of circles. (b) the first development affects the bottom layer only and then the film travels on to the bleach bath which removes only the developed part.

The whole film now receives a printing exposure before it enters the first dye-coupling developer which dyes all three layers of emulsion the complementary blue-green with the exception of first-bleached section. The film is now carefully dried and prepared for the second bleach (e) which has rather



wonderful properties. Not only is it so controlled that it bleaches the two top layers only—it also oxidises the silver back into silver halide—and thus once more the film is sensitive to light. Again the film is exposed and the third dye-developing follows (f) this time with complementary colour magenta as the dye. Another controlled bleaching operation with the bleach attacking the top layer of emulsion only—and again making the film sensitive to light and ready for another exposure (g). Then into the final dye developer (h) carrying complementary colour yellow—to be followed by a straight-forward bleach bath which removes all silver without affecting the dyes and the film is now ready for projection. To understand thoroughly what happens during projection it will be necessary to study the last diagram of the illustration on "Processing" in conjunction with Fig. 1 (the three circles in complementary colours) on the diagram dealing with "the subtractive colour process."



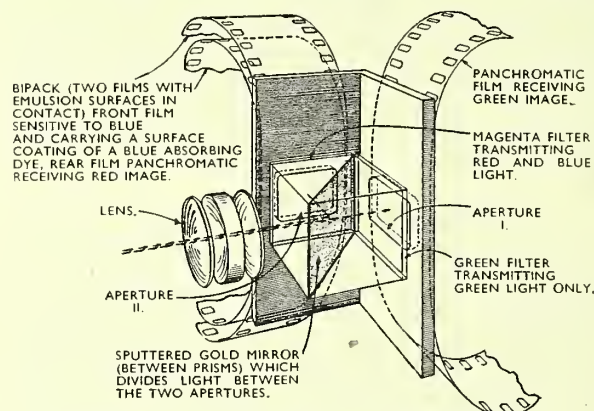
Processing of Kodachrome Film

It will be observed that a window, as it were, has been left in the "blue-green" layer but everywhere else the dyes are left in full strength. Now, imagine the white paper on which are printed the three circles in colour to be the projection lantern light. Where the colours meet in full strength (centre segments) they effectually absorb all the light—but where the magenta and yellow meet the white paper (or projection light) shining through becomes red.

Technicolor.—An American process, it has been used by Walt Disney for filming his "Silly Symphonies" in colour, also for Becky Sharp and a few other remarkable "pictures." It requires a Technicolor camera, but the process is not within the scope of the amateur; nevertheless, Technicolor is so interesting that below is given a short description of the methods used.

The camera itself is fairly well explained by the diagram included. A sputtered gold mirror between prisms supplies two apertures with the complete image as supplied by the lens. In

front of aperture No. 1 is a green filter allowing green light only to penetrate to the film behind it. This film travels in unison with the two films behind aperture No. 2—an aperture which is protected by a magenta filter transmitting red and blue light. Two films are in emulsion contact behind this aperture. The front film is sensitive to blue only and is stained blue. Thus, it not only photographs the blue light but also effectively prevents any blue light from passing through to the film immediately behind it; which is busily engaged in photographing red. It will thus be seen that by means of a bi-pack film the two apertures actually register three colours. The camera so photographs the three true primary colours (blue-violet, green,



Schematic arrangement of Optical parts of Technicolor Camera

red) of any given scene simultaneously on three separate strips of film all in complete register and balance, one with the other. From the resulting three colour separation negatives (which are not actually in colour) positives must be made. This is done by printing on to a specially prepared stock (one for one) and processing in such a manner that there are finally produced images of hardened gelatin which are actually in relief, like the surface of a printing block. These three positives are known as the "matrices." The three matrices are then used to print—on to one blank strip of film—the three complementary colours in their proper sequence and register, and when the transfer is complete the film is ready for projection. Thus there is a process that, while the negatives and the positives hold no actual colour, will print as many colour films as is desired for showing in cinemas all over the world.

Gasparcolor.—Another cinematographic colour process, the camera for which need not be described as in essential details it is similar to the Technicolor. It is in the processing where the two processes fundamentally differ. In Gasparcolor, the three colour separation negatives are printed direct on to a one colour positive, there being no intermediate process. The method by which this is done is as follows: There are, in the Gasparcolor positive, three sensitised emulsions holding in suspension different coloured transparent dyes. They are in the following order—two being on one side of the film, the other on the reverse side: emulsion stained magenta; emulsion stained yellow; (celluloid base) emulsion stained blue-green (the complementaries). The magenta layer of emulsion is sensitive to blue light alone, but the underlying yellow is sensitive to red light also. Blue-green on the reverse side of the film reacts to blue light again. This sounds somewhat complicated, but it is much simpler in actual practice as coloured lights are used to print the film. The negative which prints the magenta emulsion is printed by blue light—a light which is rejected by the yellow emulsion below and thus only the magenta layer takes the record. Following this, the next negative—printed with a red light, this not affecting the first printing—places its impression on the yellow emulsion. Finally, the blue-green is printed with the aid of a white light. The three layers are, as can be seen, separately printed without one affecting another in any way whatsoever. Through the medium of an ingenious printing machine the magenta and blue-green emulsions are printed simultaneously; the film running through the machine again for the yellow printing.



The University of London

THE centenary of the incorporation by royal charter of the University of London, which falls this year and is being celebrated next week, affords an opportunity to refer to the history of this great institution and to the place it holds in the educational life of the country. The promoters of the scheme for establishing a university in the Metropolis had no intention of setting up a replica of either of the two older universities; and their plans, however modified in actual working, have proved to be sound in conception and fortunate in result.

London in 1836

The London of 1836, though at first sight it may appear very different from that of our own day, is not difficult to visualise. The combined population of the City and County was approaching 2,000,000; coaches were being increasingly challenged for long journeys by the railways and for short distances by Hancock's "steam carriages" and other inventions; the streets were lighted with gas of low illuminating power, and were patrolled in alternation by parish constables and night watchmen. Viscount Melbourne was First Lord of the Treasury; the title remained the usual designation of the head of the Government long after his time, the expression "Prime Minister" not shedding till about the middle of the nineteenth century the odium attached to it in the eighteenth. The Houses of Parliament had been burnt down in 1834, and Barry's design for the present building was appearing in the Press. Gladstone was Under-Secretary for War; Disraeli had not yet succeeded in winning a seat in the House of Commons. "Pickwick," as we have lately been reminded, was appearing serially. Carlyle had nearly completed his "French Revolution." Browning was writing "Strafford." Tennyson was brooding over "In Memoriam," though he kept it back till 1842. Darwin had just returned from his five years' voyage in "The Beagle." The Royal Academy of Arts held its sixty-eighth exhibition at Somerset House. Sir George Smart was conducting the Royal Philharmonic Society, and introduced Mendelssohn's "St. Paul" to this country at Liverpool.

If we wish to know what people were reading—and it will be remembered that school boards were not yet practical politics—we can hardly do better than turn to "The Athenæum" of October 8, which, in spite of having deprecated the inconvenience of pressure on space a few weeks earlier, devoted eight pages to reviewing four books—a translation of Lessing's "Laocoon," the famous Lady Blessington's "Confessions of an Elderly Gentleman," the Prince of Canino's "Memoirs," and G. P. R. James's three volumes of short stories entitled "The Desultory Man." Lady Blessington's reviewer evidently set out to be amiable, and filled the page allotted to him with a liberal share of quotation and a modicum of comment. We may sample this novel as a type of storytelling for which there was presumably a steady demand:—

"There, Mr. Lyster, are my two eldest sons," said Lady Moreton. "This is Sir Henry Moreton, and the other is Sir Thomas Villiers, to whom my poor father's baronetcy devolved. Are they not strikingly like their father and grandfather, Mr. Lyster? . . . Come, Henry, my dear, come and speak to this gentleman," resumed his mother, with a tremulous voice.

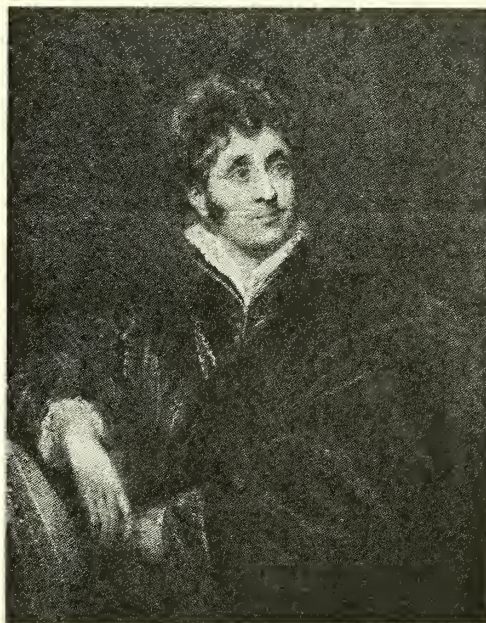
"The boy approached me with measured steps, and a formal air; and his shoes creaked so exactly as those of his father used to do, that for a moment I looked at his hair, expecting to see that he also wore a wig, so precisely did he appear a miniature copy of the defunct Baronet.

"It is strange," said Lady Moreton, "to what a degree he has all the little personal peculiarities of his poor dear father. I do not know, Mr. Lyster, whether you ever observed that my dear Sir Henry's shoes always creaked! . . . and now I have a pleasure, though it is not devoid of melancholy, in hearing my boy's shoes creak like those of his father."

A fully documented account of the events leading to the incorporation by royal charter of the University will be found in H. Hale Bellot's "University College, London, 1826-1926," on which we have drawn in the compilation of this part of our narrative. Those who have not the time to digest a book so ample in scope can see a readable summary of these events in the "Historical Introduction" to the Calendar of the University for the current year. Mr. Bellot remarks that the English universities had become, by the end of the eighteenth century, "the preserve of a section of the community." Somewhat earlier, in 1764, Joseph Priestley had written: "It seems to be a defect in our present system of public education that a proper course of studies is not provided for gentlemen who are designed to fill the principal stations of *active life*, distinct from those which are adapted to the *learned professions*. We have hardly any medium between an education for the counting-house, consisting of writing, arithmetic and merchants' accounts, and a method of institution in the abstract sciences. . . ."

Preparatory Work

In consequence of the social and religious exclusiveness which had become marked at Oxford and Cambridge late in the century, the freer and more active intellectual life of the country was to be found elsewhere, first in the academies which had to fill the rôle of the universities for men who could not gain admission there, and secondly in such bodies as the Royal



THOMAS CAMPBELL

Institution and the Manchester Literary and Philosophical Society. In Scotland, happily, the position was different: activity in many kinds of study was vigorous in the Universities of Edinburgh, Glasgow and Aberdeen from a comparatively early period in the eighteenth century, and from the example of Scotland London was able to evolve some of its most distinctive features.

The man to whom, more than to any other person, the foundation of the University of London was due was Thomas Campbell, chiefly remembered as a poet for his "Pleasures of Hope." The idea is said to have occurred to him in 1820;



University of London Headquarters

Above : *The Present Building in South Kensington.*

Below : *The New Headquarters in Bloomsbury (Photographed by A. C. Cooper & Sons, Ltd., from a drawing).*





but it was not until 1825 that he made it public in a letter to Lord Brougham, published in "The Times." After considerable "spade-work" and negotiation with interested bodies, a public meeting was held on July 1, 1825, at the Crown and Anchor Tavern, the scene of more than one important event in the history of pharmacy. The meeting was not without its amusing features. The Lord Mayor, who presided, was forty-five minutes late. After the proceedings had been launched by Lord Brougham and a Mr. John Smith, they were held up by a thoroughgoing bore; on the audience becoming restive, he asked whether, at a late period of his life, he was to be "put down by those who, in doing so, afford the strongest proofs of the necessity for establishing a London University." Having scored this point, he soon afterwards retired under protest. Although the financial outlook was not too bright, the foundation-stone of what is now University College in Gower Street was laid on April 30, 1826. The building was opened for teaching in October 1828 with a strong group of professors. Mr. Bellot tells us that "more was written against the university than for it," and he gives examples of various criticisms, some crudely severe, some heavily humorous. However, the classes got going in spite of unfavourable comment.

University College was not the only institution of its kind. On June 21, 1828, a meeting was held at the Freemasons' Tavern, with the Duke of Wellington in the chair, for the purpose of inaugurating a plan for establishing the College in the Strand known as King's College. Political and religious rivalries were at work to set up a teaching centre which should equal or excel the one in Gower Street. The College obtained a charter from George IV in the following year.

The Grant of the Charter

The procuring of a charter for the University of London—a title taken to itself by University College, to the annoyance of the supporters of King's—proved to be a much longer and more difficult proceeding. As early as 1825 the promoters of the Gower Street scheme tried to secure incorporation: it seems curious, at this distance of time, that they did not ask for the power to grant degrees. Sir Robert Peel, who then represented the University of Oxford in Parliament, was dubious about the propriety of the steps taken, and wrote a private letter to the Dean of Christ Church asking for more information than he himself possessed on the possible effects of so grave a departure. A Bill was introduced, but on coming up for its second reading it had to be withdrawn owing to an irregularity. A favourable opportunity to take up the subject again did not occur till late in 1830. Matters then began to move, and early in the next year a petition for incorporation received the approval of the law officers of the Crown; but at this stage a lengthy controversy arose over the proposal to grant degrees, and the medical schools sided with the Universities of Oxford and Cambridge in opposition to the London promoters. The petition lay dormant till 1833, by which time Durham University had come into being. The controversy then took a new form, being this time bound up with the reshaping of medical education. During the early part of the following year petitions for and against the charter were reaching the Privy Council from various sources. The matter was dealt with by the Council on two days in April and one in May 1834. A passage in Greville's "Journal of the Reigns of King George IV and King William IV" gives a graphic picture of the clash of opposing opinions. "The most striking incident," Greville writes, "occurred in an answer of Bickersteth's to one of the Chancellor's interruptions. He said, talking of degrees, 'Pray Mr. Bickersteth, what is to prevent the London University granting degrees now?' To which he replied, 'The universal scorn and contempt of mankind.'"

The Privy Council took no action on the arguments presented to it, and there was another period of quiescence; but on March 26, 1835, a motion was carried against the Government in the House of Commons resolving that an address in favour of the grant of a charter be presented to the King. The address was duly presented, and the Royal reply was favourable, although it pointed out that the Privy Council had not yet reported on the matter. In May and June the Council had two more meetings, and affairs began to reach

the stage of negotiation between the parties interested. Of the first of these additional meetings Greville writes:—

"When they came to discuss the matter nobody seemed disposed to move; at last Brougham proposed a resolution 'that the King should be advised to grant a charter making the petitioners an University, the regulations and restrictions to be determined hereafter.' . . . After much tedious discussion the words 'university,' etc., were omitted, and the resolution moved was 'to grant a charter.' The Duke of Richmond formally opposed it. . . . After wasting an hour and a half in a very fruitless and not very interesting discussion (everybody looking bored to death except Brougham, who was talking all the time) the Council broke up without doing anything, and agreed to meet again on Friday next."

Drafts of two charters were submitted to the House of Commons in August 1836, and excerpts from one of them were printed in the "Gentlemen's Magazine" for October. Eventually, on November 28, the seal was affixed to the approved charter; what had been the University then became University College.

As the calendar of the University reminds us, an attempt had been made to provide a university for London in the sixteenth century. In 1548 Sir Thomas Gresham endowed seven professorships and assigned his mansion in Bishopsgate for the residence and lectures of the professors; and until the great fire in 1666 this institution was carried on according to the founder's wishes. The appendix to Stow's "Annales" (1615) gives an account of the "three famous Universities of Oxford, Cambridge and London." Sir George Buck, who was responsible for the description of the third of these universities, enumerated various colleges and schools, adding that they were "lacking nothing but a common government and the protection of an honourable Chancellor" to give them collectively the unity and repute of a university. The Gresham foundation is more fully referred to on pp. 747-755 of this issue.

Development of the University

The first Chancellor of the University was the Earl of Burlington (afterwards Duke of Devonshire), and the first Vice-Chancellor Sir John Lubbock (father of the first Lord Avebury). John Dalton and Michael Faraday were among the original Fellows. Until the end of the nineteenth century the University was to a considerable extent under Government control; rooms were provided for its administrative work in Somerset House, then in Marlborough House, then in Burlington House, and eventually in the Imperial Institute, South Kensington, which remains the headquarters till the new buildings in Bloomsbury, shown in one of our illustrations on p. 776, are ready. We need not record in detail the grants of supplementary charters and changes in the examinations. In 1867 the bold step was taken of conferring academic distinctions on women. Some years earlier the Senate had taken legal opinion as to whether it had power to do so, and was advised in a contrary sense. The law officers of the Crown, who were approached on this second occasion, advised similarly. The only way out of the difficulty was to obtain a supplementary charter, and this was done. By the terms of this charter no male persons were admitted to the examinations for women. Strangely enough, few women took advantage of the facilities thus offered; and the ultimate outcome was that in 1878 another charter was obtained making every degree or other distinction awarded by the University open to students of both sexes on equal terms. Parliamentary representation was obtained in 1867. Since 1900 the two oldest colleges of the University have been incorporated in it, and various schools have received recognition from time to time, including the School of Pharmacy in Bloomsbury Square.

The history of the new buildings now being erected on a site of about twelve acres to the north of the British Museum has been so fully related in the daily Press that we need not dwell on it. We may add, however, that the University has been very fortunate, particularly of late years, in finding munificent donors of money and other possessions which will enhance its value as an institution filling a unique place in the culture of this country.



Cinema Sprays

THE high cost of alcohol has been responsible for many innovations in the perfumery trade, not the least of which concerns cinema sprays. In earlier days such preparations were more of the nature of what were generally called sick-room deodorisers, and consisted of a spirituous solution of essential oils with a little formaldehyde. The use of isopropyl alcohol cut the cost to some extent, but even in the diluted state in which the spray was used this solvent was not altogether satisfactory. In attempts to reduce the amount of alcohol used soap was employed to emulsify the essential oils, but in recent years alcohol, thanks to the Board of Customs and Excise, has staged a come-back. At the same time newer synthetics and isolates have supplemented and in some cases ousted the essential oil. Modern sprays for use in cinema and theatre may generally be considered to be strong solutions of a perfume compound in industrial spirit (I.M.S.), with the addition of formalin and water. The purpose of the spray, apart from assisting in clearing a smoke-laden atmosphere, is to cover the odour of tobacco smoke, which would in time become objectionable. The formaldehyde present exerts a mild antiseptic action. Regarding the type of perfume one should offer, it would be considered that the fresh, clean type, such as eau de Cologne pine, jasmin, gardenia and lilac, would invariably be used. This is not always the case, and quite frequently perfumes of the heavy type, such as fougere, oriental, opoponax and chypre, are asked for; the chemist must therefore be prepared to cater for such a varied taste, and the following formula will serve as a basis:—

I.M.S. (perfumery grade) ...	120 oz.
Perfume compound ...	10 oz.
Formalin ...	6 oz.
Water ...	24 oz.

Dissolve the perfume compound in the spirit, add the water and formalin and shake well. Filter if necessary.

The spray should be packed in suitable bottles, say, $\frac{1}{2}$ pint, and pint, and suitably labelled with directions for use. A reasonable dilution would be 1 part of the spray to 19 parts of water. The degree of dilution, however, differs according to circumstances. The above formula can, if desired, be modified to suit particular requirements as to cost. The next matter for consideration is the perfume compound, and for these the following formulas are suggested (all parts by weight):—

Lavender	
Lavender oil (French 38/40) ...	6
Spike oil (Spanish) ...	3
Diphenyl oxide ...	1
Oak moss resin ...	1
Geraniol pure ...	1
Linalol ...	1
Bergamot oil ...	1
Terpineol ...	1
Coumarin ...	1
Musk xylol ...	1
Lilac	
Terpineol ...	8
Hydroxycitronellal ...	1
Bromstyrol ...	1
Linalol ...	1
Benzyl acetate ...	1
Aubepine ...	1
Heliotropin ...	1
Phenylethyl alcohol ...	1
Musk xylol ...	1
Carnation	
Isoeugenol ...	4
Eugenol ...	3
Clove oil (English) ...	2
Hydroxycitronellal ...	1
Benzyl acetate ...	1
Cinnamic alcohol ...	1
Cananga oil ...	1
Vanillin ...	1
Phenylethyl alcohol ...	1
Terpineol ...	1
Musk xylol ...	1

Rose		Jasmin	
Geraniol pure ...	4	Benzyl acetate ...	7
Diphenyl methane ...	1	Terpinyl acetate ...	1
Geranyl acetate ...	1	Linalol ...	1
Benzyl acetate ...	1	Petitgrain oil (Paraguay) ...	1
Phenylethyl alcohol ...	2	Hydroxycitronellal ...	1
Citral, pure (ex lemongrass) ...	1	Phenylethyl alcohol ...	1
Citronellol ...	4	Amyl-cinnamic aldehyde ...	1
Geranium oil (African) ...	2	Cananga oil ...	1
Patchouli oil ...	1	Styrax resinoid ...	1
Benzophenone ...	1	Benzyl propionate ...	1
Pine		Fougere	
Pine oil (Siberian) ...	8	Lavender oil (French) (38/40) ...	3
Bornyl acetate ...	2	Citronellol ...	2
Terebene ...	3	Vertiver oil ...	1
Phellandrene ...	1	Patchouli oil ...	1
Lemongrass oil ...	1	Bergamot oil ...	2
Eau de Cologne		Vanillin ...	1
Bergamot oil ...	3	Coumarin ...	1
Linalyl acetate ...	2	Diphenyl oxide ...	1
Terpinyl acetate ...	2	Oak moss resin ...	1
Orange oil sweet (Guinea) ...	3	Benzophenone ...	1
Rosemary oil (Spanish) ...	1	Musk xylol ...	1
Lavender oil (French 38/40) ...	1	Geranium oil (Bourbon) ...	1
Citral pure (ex lemongrass) ...	1	Benzyl acetate ...	1
Neroli oil (artificial) ...	2	Linalyl acetate ...	1

In all cases the crystalline fixatives are dissolved in the remainder of the compound by the aid of the water bath.

For a more comprehensive range of perfume compounds one of the standard works upon the blending of perfumes should be consulted. Should the pharmacist find it inconvenient to blend his own compounds, these may be obtained from the many perfumery houses specialising in the manufacture of such preparations. It must be pointed out that in using industrial spirit for perfumery purposes, it is necessary to have the formula passed by the Customs and Excise authorities before offering the article for sale. In the case of the formula given, they may decide that the formalin in conjunction with the quantity of perfume compound, is sufficient to denature it. However, this decision is entirely in their hands, and they may require the addition of such a substance as diethyl phthalate. This information can be obtained from the local Customs Officer. It is owing to these restrictions in the use of I.M.S. that another method has sometimes been adopted in the manufacture of cinema sprays. It employs the use of sulphonated castor oil, and the following general formula will illustrate its use:—

Sulphonated castor oil ...	80 fl. oz.
Perfume compound ...	14 fl. oz.
Water ...	60 fl. oz.
Formalin ...	6 fl. oz.

Add the perfume compound to the sulphonated castor oil and shake, when a viscous product is formed. Now add the water and formalin, shake, and allow to stand until a clear product is formed. The spray must be suitably diluted for use. Perfume compounds containing crystalline fixatives such as the artificial musks sometimes give rise to trouble with this type of spray, the resulting product being turbid. An experiment upon a small scale will indicate if the compound is suitable or otherwise. There is also a possibility that sprays made with sulphonated castor oil may develop, after time, unpleasant odours due to sulphur compounds derived from the sulphonated oil, by slight decomposition, which reactions are probably set up by conditions of storage, such as temperature, light, and the effect of certain ingredients of the perfume compound. It would therefore be wise to make a small quantity of such a spray and keep it under observation for a reasonable length of time before deciding to market it. The sprays may be tinted if so desired, but care must be taken to use a colour which will be unaffected by the formalin.

"SURGICAL SPIRIT is 100 per cent. pure alcohol."—A chief constable at Kendal Police Court.



British Chemical

London



Plant Exhibition

June 22-27

THE wide range of apparatus and plant of British manufacture which is now available not only for the chemical and allied industries, but also for numerous other branches of industrial activity is shown at the British Chemical Plant Exhibition at Central Hall, Westminster, opened by the Right Hon. J. Ramsay MacDonald, M.P., on Monday last. The exhibits reflect the progress that has been made in the design and manufacture of such equipment since the last exhibition in 1931. The first International Congress of Chemical Engineering is being held in the same building and for the same period as the exhibition (June 22 to 27) and provides a unique opportunity for bringing the activities of the British chemical plant industry to the notice of chemists, chemical engineers and chemical technologists not only of Great Britain, but of the whole world.

The research exhibit, organised by the Department of Scientific and Industrial Research, shows the work which is constantly in progress to maintain and improve the quality of British manufactures, and to discover new and better methods of production and use. In particular, it shows the benefits of scientific research in industry, with special reference to chemical engineering. The basis of the research exhibit is co-operation, and those stations of the Department of Scientific and Industrial Research and those industrial research associations which are more closely concerned with chemical engineering are participating in this collective display.

In the exhibition we see how "special" steels have become "general" in their applications in the chemical industry, thanks to their amazing qualities. Such is the progress made that whereas, only recently, the size of the plant that could be made by welding was limited by the requirement that it had to undergo a heat-treatment to prevent corrosion from developing round the welded area, now this limitation does not exist, for, thanks to research, "weld-decay" is no longer a bugbear.

An inspection of the exhibits will prove conclusively that British chemical plant and equipment for every conceivable purpose, and of the highest quality and efficiency, is now obtainable, and every chemist and chemical engineer will be amply repaid for any time spent at the exhibition. We give brief accounts of some of the exhibits and illustrations of examples of the plant and apparatus on view. At all the stands experts are in attendance.

THE ALUMINIUM PLANT & VESSEL CO., LTD. A. 7 & A. 9.—This firm shows much interesting work in aluminium and other metals, such as nickel, Monel metal, stainless alloys, gun metal, copper and, of course, an A.P.V. speciality, Alpac metal (an aluminium-silicon alloy). Of special interest is the new type of plate heat exchanger provided with stainless steel plates. The liquids move in counter flow, and as the direction of the flow is reversed at the end of each plate, the turbulence thus enhances exchange of heat.

BENNETT SONS & SHEARS, LTD. A. 12.—Diagrams and illustrations on the stand indicate that recent products of this firm include a rotating economiser and a rapid circulating evaporator. There are small vacuum stills for the rectification of essential oils and so on, and stills for fatty acids, lime juice and a variety of other products. Emulsification is also provided for, as there are hand emulsifiers, mixers and emulsifiers treating various materials.

BRITISH OXYGEN CO., LTD. B. 20.—Is showing oxy-acetylene welding equipment for effecting joints in ferrous and non-ferrous metals. Oxy-acetylene welding rods and fluxes for making joints, building up worn surfaces, for hard surfacing prior to service and for applications of corrosion-resist-

ing metals. Lead-burning equipment. Examples of actual work carried out by oxy-acetylene welding in ferrous and non-ferrous metals are on view.

THOMAS BROADBENT & SONS, LTD. A. 15.—Pride of place is taken on this stand by the 48-in. direct, electrically driven, suspended type centrifugal with an imperforate basket and skimming gear. This type of centrifugal is used for precipitating fine solids held in suspension by a liquor. Another machine exhibited is the 26-in. self-contained fixed spindle, belt-driven centrifugal with a perforated vulcanised steel basket with gauze linings and with vulcanised and acid-resisting fittings throughout, such as a lead-lined monitor case, lead-covered top.

T. & C. CLARK & CO., LTD. A. 3.—Specialising in acid-resisting enamelled cast iron, the exhibits consist of an open type steam-jacketed mixer direct driven, suitable for mixing heavy viscous products, a steam-jacketed still complete with water-jacketed fractionating column, sulphonating pot, buckets, beakers, etc. In glass-lined mild steel are examples of open-top tanks, closed type storage vessel, trough, and a section of a rotating drying drum.

DOULTON & CO., LTD. B. 12.—"White Stoneware" is the feature of this exhibit, which can now be made in sizes almost as large as the old brown stoneware, whilst it has a porcelain-like finish, is completely free from iron oxides, and can be easily cleaned. Such a product recommends itself at once for applications such as the production of fine chemicals, cosmetics and, of course, of food products.

ENAMELLED METAL PRODUCTS CORPORATION²(1933), LTD. B. 23 & B. 28.—This stand exhibits "Pfaudler" glass-lined equipment, which is the works counterpart of laboratory glassware. The "Pfaudler" equipment comprises a glass-lined distillation unit, including still complete with agitator, etc., jacketed condenser, and a single shell receiver. Other exhibits are a complete "Pfaudler" glass-lined plant for manufacturing cosmetics and similar preparations.

FIRTH-VICKERS STAINLESS STEELS, LTD. A. 6.—The whole range of acid, chemical and heat-resisting steels as developed by this company for chemical plant is shown. The exhibits are technical, demonstrating the various processes involved in the fabrication of plant together with complete physical and chemical corrosion test data.

SAMUEL FOX & CO., LTD. B. 7.—This company is showing welded containers and samples of plate and bar in "Silver Fox" new process stainless steels. These exhibits not only reveal the ease with which "Silver Fox" steels are manipulated, but show that the types free from weld-decay can take a high polish. The new process referred to is the high-frequency process which is particularly adapted for the production of non-corrosive and other special steels. The refining process peculiar to this method of manufacture ensures that the steels are free from harmful inclusions. Messrs. Fox are producing an austenitic steel which, without the addition of material quantities of alloying elements, is entirely free from weld-decay. This steel is known as "Silver Fox 22." Another quality of "Silver Fox" stainless steel is No. 24, which has been devised for use in contact with sulphuric acid. This steel is also totally resistant to boiling solutions of any strength of ammonium chloride, ammonium sulphate, sodium sulphate, citric acid, tartaric acid, nitric acid, all nitrate solutions and most sulphate and chloride solutions.

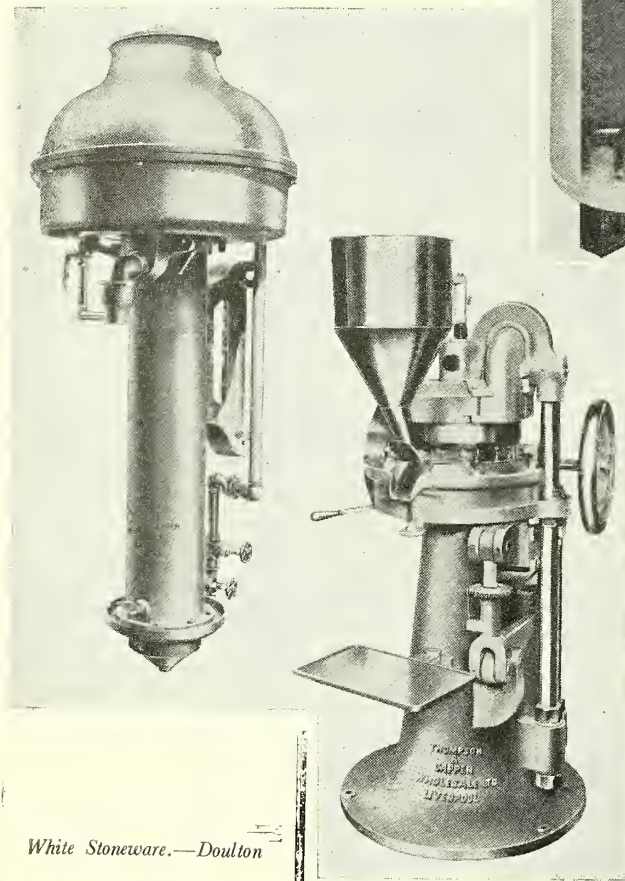
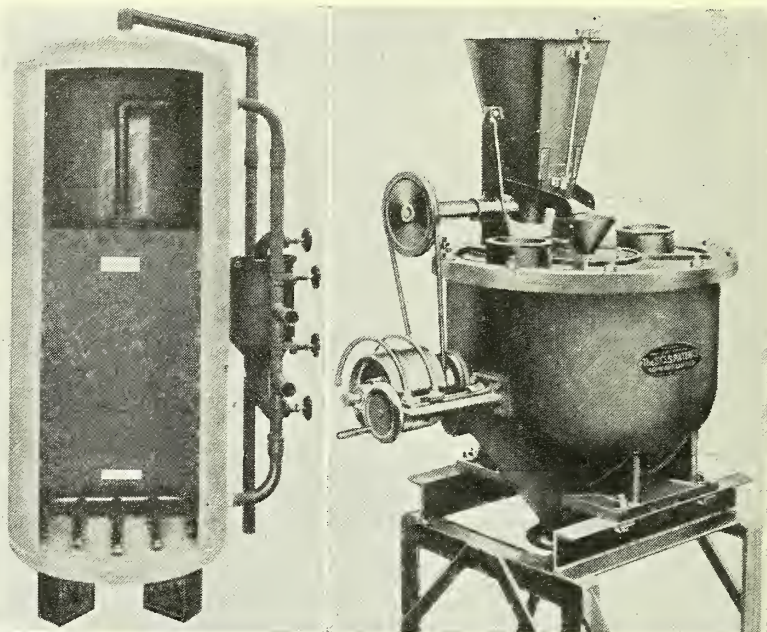
HATHERNWARE, LTD. A. 11.—The selection of chemical stoneware on this stand includes white stoneware especially suitable for pharmaceutical and food products



Right: Base-exchange Water Softener
(sectionised) — United Water
Softeners.

Grinding and Blending Mill.
—Pascall Engineering.

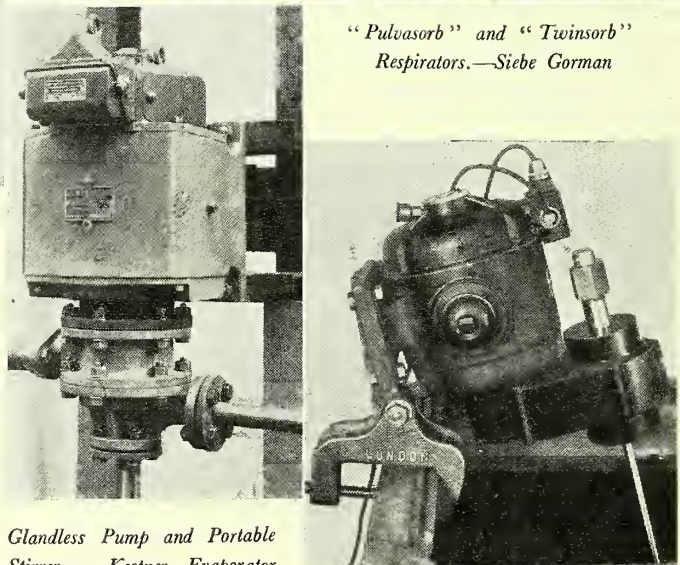
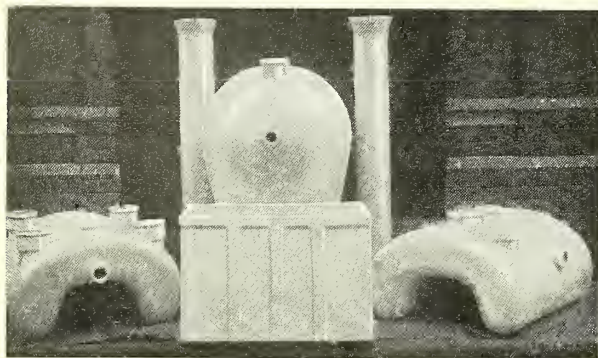
Below: Steam Still and "D" Rotary
Machine.—Manesty Machines.



White Stoneware.—Doulton



"Pulvasorb" and "Twinsorb"
Respirators.—Siebe Gorman



Glandless Pump and Portable
Stirrer. — Kestner Evaporator



plants. An absorption tower with distributing and perforated plates is made in the company's new "Greyware," which has a dense grey body covered by a brown glaze. A $\frac{3}{4}$ -inch acid pump continuously pumps through a stoneware pipe line, also exhibiting conical flanged piping with metal couplings.

INTERNATIONAL COMBUSTION, LTD. B. 22.—This stand is devoted to the exhibition of grinding and screening plant. The two major exhibits are: (a) a constant weight feeder; and (b) a Raymond mill model. The Raymond mill model shows the degree of extreme fineness and uniformity to which a raw material may be ground. The screening action is represented by a "Junior Hum-mer," an electrically vibrated screen.

S. H. JOHNSON & CO., LTD. B. 8.—A good selection of filter plates and frames of various types and sizes, in wood, iron and Bakelite, are on view. Also a 9-in. square filter press on stand with a belt-driven pump; 6-in. square filter press; 6-in. by 4-in. stk. single-stage slide-valve vacuum pump; hydraulic tincture press; model vortex mixer, and a weighted-type plunger pump.

GEORGE KENT, LTD. A. 17.—Recording and control instruments are featured here with automatic controllers for temperature, pressure, flow and liquid level. A Kent Multelec recorder measures or controls temperature, pH values, electrolytic conductivity and other conditions; the pH recorder is shown working. Kent KM differential type flow recorder; RS/C steam meter for small mains; manometers of various types for heads from $\frac{3}{4}$ -in. water gauge upwards.

KESTNER EVAPORATOR & ENGINEERING CO., LTD. A. 1.—The high vacuum multi-circulation film evaporator is represented by a small plant with stainless steel contact. This is chiefly used for sensitive products such as fruit juices, milk and the like. Actually, in the continuous type of evaporator the contact is as little as a few seconds in some cases, as with gelatin, tan extract, etc. Another speciality shown is spray-drying plant, which is supplied in complete installations for the treatment of dilute liquors up to the finished dry product. A variety of pumps, with and without glands, for the handling of acids and corrosive liquors reminds one of the extensive range available, and the typical horizontal lead-lined fan impeller for handling corrosive gases recalls that the firm specialises in homogeneous lead lining. A portable electrically-driven stirrer is shown working, and for larger scale work there is shown the effective "Vortex" stirrer, with its flexible bearing, which eliminates any internal footstop or other bearings in contact with the liquid. Of interest, too, is the special jet for the mixing of two liquids, as in the continuous addition of a small quantity of reagent to a larger quantity of liquid.

THOMAS LOCKER & CO., LTD. B. 13.—This company are making a special display of screening and handling equipment, which includes a "Locker-Rotex" screener with its ball-and-bevel mesh-cleaning device, "Locker-Trayco" feeders and conveyers, in addition to a range of wire cloth, wire gauze, and perforated sheets, in all metals, including "Staybrite" steel. The "Locker-Rotex" screener is of particular interest to those faced with problems in the screening of fine chemicals, since the unique method of cleaning the mesh obviates any possibility of "blinding."

MANESTY MACHINES, LTD. A. 14.—Examples of the comprehensive range of Manesty water stills are on view. Automatic in action, these stills produce distilled water in amounts ranging, according to type, from 3 pints to 50 gallons per hour. To illustrate other types there is an electrically heated still and another heated by a Primus paraffin burner supplied from a large-capacity pressure tank. An interesting exhibit on the stand is the Manesty "D" rotary tablet machine. This machine is seen in operation and will preform Bakelite moulding powder at a rate of 300 to 350 tablets a minute. Tablets up to seven-eighths of an inch can be made on this machine and, of course, the sizes and shapes of the tablets can be varied by using suitable punches and dies. The visitor can also inspect various other Manesty tablet machines such as the single-punch "F" machine (the geared model) and a hand tablet machine. To prepare granules for tablet making, the material is mixed with colouring and binding material in

a granulating mixer and then passed through an oscillating granulator. The Manesty oscillating granulator is shown on the stand, and the firm's granulating mixer, drug mill, press, etc., are to be seen in the form of illustrations.

MANLOVE, ALLIOTT & CO., LTD. B. 18.—The exhibit includes model working sections of rotary dryers, showing (a) standard saw tooth lifters; (b) radial path cell arrangements. "Easifilt" enclosed pressure filter. "Radford" enclosed pressure filter. Sterilising filter with sterilising "films" or "pads." Filtercloth washing machine. Centrifugal dryer with air heater attached. Bottle and flask sterilisers; vacuum fumigators, with patent circulatory system.

NEGRETTI & ZAMBRA. B. 15.—A good selection of instruments for indicating, recording and controlling temperature, humidity and pressure are on view, including mercury-in-steel indicating and recording types; bi-metallic recording thermometers; portable models; electrical resistance thermometers; multipoint pattern and continuous chart recording types. Multiway cocks for light pressures; needle valves for pressures up to 10,000 lbs. per inch.

PASCALL ENGINEERING CO., LTD. B. 31.—Sifting, mixing and grinding plant shown include a modern sifting machine for the fine sifting of powders, all-metal construction with open-door feature. Reddrop-Periflo patent mill, suitable for the fine reduction of materials to powder and the intimate blending of one or more products and, by the substitution of special discs, instantly adapted for emulsification.

PREMIER COLLOID MILLS, LTD. A. 19.—A laboratory type high-speed mill, fitted in Monel metal, is shown; the machine is the simplest of the rotor type emulsifiers. A vertical type Premier paste mill for the treatment of viscous and semi-paste products is another interesting exhibit.

GEORGE SCOTT & SON (LONDON), LTD. B. 23 & B. 28.—On these stands are shown a range of chemical plant, including a Scott patent high-vacuum distillation plant, for glycerin, fatty acids, etc.; Scott patent forced circulation evaporator impeller embodied within bottom pan of evaporator eliminating external cooling, and Scott patent vacuum continuous band dryer, for food and chemical products.

SIEBE, GORMAN & CO., LTD. B. 25.—This stand is of particular interest. Amongst the exhibits are armoured, leather, rubber and other gloves for stokers, handling acids, etc., asbestos fire-fighting equipment and clothing, oilskin clothing for working in contact with oil, acid-proof clothing, sand-blast and welders' helmets, and many other protective devices. The selection of industrial goggles is particularly complete, and there are gas masks for every use. Dust respirators are shown, one type affording protection against dust particles a fraction of a micron in size. There is the improved "Pulvasorb" dust respirator, in which the exhaled moisture-laden air is prevented from passing out through the filter and thus increasing the breathing resistance. On show, amongst other specialities, are various types of self-contained oxygen breathing apparatus for work in irrespirable atmospheres. The "Proto," "Salvus" and "Fireox" types have been extensively adopted by chemical works. The "Novita" oxygen resuscitating apparatus, for men overcome by smoke or poisonous gases, and the "Novox" apparatus, the latest development in which a mixture of 93 per cent. oxygen and 7 per cent. carbon dioxide is used, are on view.

TINTOMETER, LTD. A. 2.—The exhibits include a complete colorimeter for laboratory and works, for the precise measurement of the colour of all substances. Lovibond Comparator, for determining the pH (acidity or alkalinity) of aqueous solutions. B.D.H. Lovibond Nessleriser, for delicate colorimetric chemical analysis.

UNITED WATER SOFTENERS, LTD. B. 32.—On this stand is a small-scale model of a comprehensive water-treatment plant. The treatment comprises lime-soda dosage by ground-operated P.M. type gear, neutralisation with sulphuric acid, filtration through pressure filters using marble as the filter bed, and final softening to zero hardness by "Permutit" base-exchange plant.



The Knight of the Broken Pestle

AT daybreak Sancho Panza, seated on his ass, Dulcie, and I set out on a journey towards the palace where that beauteous handmaiden of medicine, the Princess Pharmacia, reigned. We had been proceeding on our journey for some time when Dulcie, for no reason whatsoever, sat down suddenly in the road with a loud "Hee-Haw!" and shot Sancho Panza off her back. Galloping rapidly back to him (for naturally I, as a true knight, always rode in front of a humble retainer), I asked what exactly had happened.

Sancho Panza replied: "Apparently she objects to walking backwards, and, as you know, sir, we set out backwards on this journey with our faces towards the starting point."

In as haughty a manner as I believed I was capable of, I replied: "Are you not aware that progress to the rear is in accordance with the best traditions of pharmacy? There is subtlety in this movement, which is not easily comprehended by stupid fellows who are not fortunate enough to be able to understand the innermost workings of the councillors of this fair land. If you doubt me take the Poisons and Pharmacy Act, 1908. . . ."

"Why should I?" asked Sancho Panza.

Ignoring this ignoble comment, I continued: "Then consider the Pharmacy and Poisons Act, 1933. Now, you see in the new Act the word 'Pharmacy' comes first and 'Poisons' comes last; there in a nutshell you have the whole attitude of the councillors who are the happy advisers of the Kingdom of Pharmacy."

Tempora mutantur

"In the previous Act it was thought that the control of poisons should be in the hands of those who were thoroughly well trained to handle such dangerous substances. Obviously this was an oversight on the part of the Government authorities, with whom pharmaceutical officials have always been at one."



"Why should I?" asked Sancho Panza

Fortunately, therefore, in the 1933 Act, poisons have been put in their proper place—that is to say, at the end of the Act and not in the beginning, which is now occupied by the claims of pharmacy."

"What, then, are the claims of pharmacy?" asked Sancho Panza. (I should explain that Sancho has the misfortune to have been left a small fortune by his father, who had a chain of oil stores. For his spiritual welfare, however, he was rescued from so sordid a calling and was persuaded to follow



. . . faces towards the starting point

a true knight, even myself, in his endeavours to promote knight errantry in pharmacy.)

Regarding him with my professional eye, I replied in what I hoped were icy tones: "Pharmacy has a duty to perform to the public."

"But," interrupted Sancho, "has pharmacy any duty towards pharmacists?"

"None whatsoever," I replied, with emphasis I hope. "We are knights errant out to succour a world of retailers in distress."

By this time we had reached the top of a hill, from whence we could look down upon a valley wherein there was gathered a multitude of boisterous persons apparently engaged in an orgy of dancing and revelry.

Dance of the succoured

"A riot!" shouted Sancho, drawing his scabbard, for, unfortunately, he had broken his sword in attempting to open, on a Sunday, a branch shop of a chain store.

"Hold!" I shouted at the top of my voice. "This is no riot, this is May Day revelry. Do you not see the maypole erected upon the green with the happy dancers encircling it?"

"But who are they?" asked Sancho.

"They are some of the people whom pharmacy has been proud to succour; these are the ironmongers, the oil store-keepers, the grocers, the olla-podrida, as they say in Latin, and others enjoying the pleasures of a May Day dance in view of



the coming into force of the Pharmacy and Poisons Act, 1933."

"But who are the onlookers?"

"The onlookers," I replied, "are representatives of pharmacy who have contributed so joyfully towards this revelry and who are happy to have rescued other retail traders from continuing a weary, life-long service of selling without the authority to sell poisons."

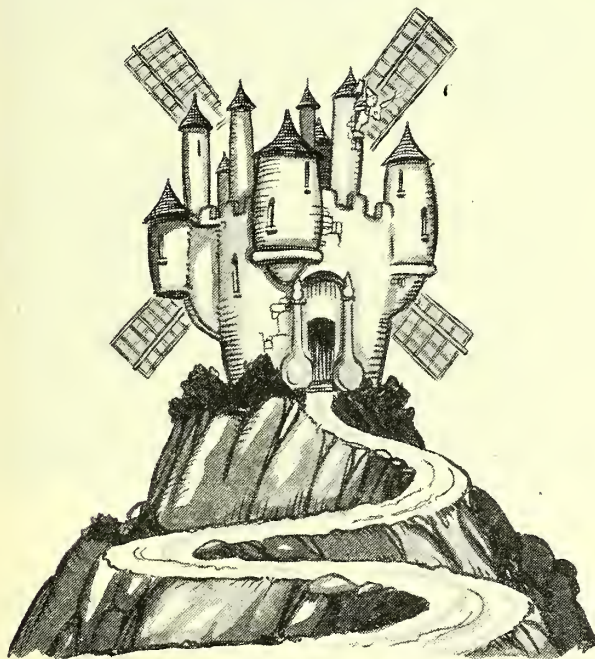
Sancho replied: "But why should a pharmacist give part of his business to other tradesmen joyfully?"

"Because the pharmacist is the unique possessor of the title 'authorised seller,' in consequence he cannot appoint a deputy unless he employs another qualified pharmacist. Since there are many pharmacists who are unable to afford the luxury of a qualified assistant, it would mean that such a pharmacist must either close his shop when he wishes to eat or refuse sales. On the other hand, other traders who are perforce to be content with the plebeian title 'listed seller' have been comforted by the authority to appoint as their deputy an errand-boy, and so go to lunch in complete tranquillity, knowing full well that if a customer calls for a hundredweight of arsenical weed-killer his errand-boy is fully competent to transact the business."

Already rescued

By this time we had reached the scene of the merry maypole dance, and Sancho said, in what I thought was rather a dreary tone of voice: "So there is no one in distress to rescue here."

I replied: "They are already rescued."



... a splendid edifice

And so we continued our journey, Sancho Panza lapsing into almost as dull a key as the donkey. For my part I was gloriously happy, knowing that I was shortly to reach the palace where the Princess Pharmacia reigned in state. I was awakened from my reverie by a shout from Sancho: "Sir, why do you call these benefactors of other traders pharmacists?"

"The reason," I replied, "is not far to seek: the term 'pharmacist' is a noble word descriptive of an ancient associa-

tion with medicine, which, unfortunately, no one understands, since no one has ever explained its meaning. So the public, in its crass stupidity, continues to call the pharmacist a chemist, and unfortunately we have had to decide that we must retain the word 'chemist,' however much we wish to surrender it. There is, in fact, little more for us to surrender; nevertheless, we go cheerfully on, hoping for the worst."

The Palace and the Princess

At length we saw in the distance our destination, a splendid edifice so thoroughly excluded from prying eyes that unless one knew where it was situated it would be impossible for the uninformed to find it. This, of course, is all to the good. I called excitedly to Sancho Panza, who was by this time as wearied as Dulcie with our long itinerary:

"There stands the palace!" I cried, waving my pestle in the direction of this noble house.

We put the spur to our steeds and arrived within easy distance of this wonderful edifice. Dismounting, I clasped Sancho round the shoulders.

"What do you think of it?" I asked.

"Why, it is only a windmill!" he replied.

"A windmill?" I said in astonishment.

"Yes," he said. "Don't you see the sails?"

"Sales, my stupid one, have nothing to do with pharmacy. Pharmacists, as professional men, eschew such mundane matters as sales."

I gazed at the noble turrets in speechless admiration. Presently the figure of a beauteous maiden appeared at one of the top turrets.

"There she is!" I shouted excitedly to Sancho. "There is Princess Pharmacia herself, waving to us from the turret window."

"It seems to me," replied Sancho, rather sullenly, "that she is shouting for help."

"Nonsense!" I replied. "How could she need help in such a wonderful palace as this?"

We rode majestically to the door, and knocking three times with my pestle we were admitted.

"Welcome!" the councillors cried with one voice. "O Knight of the Broken Pestle, we do indeed welcome thee to this palatial home."

They garlanded and crowned me with flowers, setting me on an ebony throne encrusted with gold and diamonds, which usually is reserved for the highest officials.

Outside the only sound to be heard was Dulcie's loud "Hee-Haw"!



"Help! Help!!"



The Oldest Pharmacy in Europe

The Franciscan Pharmacy in Dubrovnik, Jugo-Slavia, disputes with that of Padua, Italy, the claim of being the oldest in Europe

FEW cities in the world have retained their mediæval aspect as completely as Dubrovnik, Jugo-Slavia, and among the architectural masterpieces of this ancient and picturesque city, not the least is the Franciscan monastery, the crypts of which date back to the fourteenth century. This stands behind the main street, and is reached by a passage between the church of St. Salvator and the Franciscan church, built in Byzantine style at the beginning of the fourteenth century, and possessing a beautiful door in late Dalmatian Gothic style. The monastery owns a large collection of old Dubrovnik manuscripts and valuable paintings, among them a picture of the city prior to the earthquake by which the city suffered severely in 1667. The cloisters are a masterpiece of the architectural art of the fourteenth century. In the entrance to the cloisters is a pharmacy,

the city of Lausium or Rhagusium, and it is recorded that the first (Græco-Roman) inhabitants of the city were refugees from Epidaurus (now Cavtat), east of Dubrovnik, when that important Adriatic city was destroyed by the Avars in the seventh century. Around the earliest fortifications of the new city, Slav cattle breeders settled, and in this way arose the Slav suburbs of Dubrava or Dubrovnik, which in 1272 were merged with it in one community, surrounded by a common city wall enclosing an area about as large as that of to-day.

The Slavs soon predominated and assimilated the remnant of the Græco-Roman element, taking over the administration of the city. Wise legislation and astute diplomacy brought wealth to the city. Records prove that in the fourteenth century Dubrovnik already had a hospital, a pharmacy, and two city physicians. A water-main for industrial purposes was



Left : Windows of the pharmacy overlooking the cloisters
Right : Old bench and utensils

managed for centuries by the friars of the Franciscan Order. No documents exist to prove the precise date of the foundation of this pharmacy, but relics indicate that it was already in existence in 1318, when the present monastery, within the city walls, was erected. Before that date the Franciscan friars occupied a modest monastery, destroyed in 1290, outside the city walls. Legend has it that St. Francis of Assisi himself founded the first monastery of his Order in Dubrovnik. Authorities claim that St. Francis preached in Egypt and Palestine, and his visit to Dubrovnik thus lies within the sphere of credibilities, since the way to Egypt would lead him along the Adriatic coast. To explain why the first Franciscan monastery was situated outside the city walls it is necessary to relate some of the city's history. The foundation of Dubrovnik (Ragusa) goes back to legendary times. Eighth-, ninth- and tenth-century chronicles mention

carried into the town in the fifteenth century and the number of physicians and pharmacies doubled.

Founded outside the City

In the Middle Ages Dubrovnik was an independent aristocratic republic, and the greatest commercial centre in the Balkan Peninsula. It is probable, therefore, that the Government of the aristocratic republic preferred to avoid importing a "social problem" when the Franciscans came to the city, and banished them to the district outside the wall, where heretics were obliged to live. With their vow of extreme poverty, the first friars of the Franciscan Order spread ideas unwelcome to the upper social classes. Left thus to themselves, and keen to help the sick and the lepers, the Franciscans decided to conduct a pharmacy of their own. This was originally called an "aromatorium,"



and its equipment was very modest; medicinal herbs, balsams, unguents and resins constituted the stock of drugs. Time and experience improved the service. Besides old lists containing names of medical plants in the Latin, Italian and Serbo-Croatian languages, there have also been found volumes of recipes and rules for the treatment of diseases. Most interesting, moreover, is the collection of utensils adorning the inside of the present pharmacy. Old posters, carrying the image of St. Francis, have also been saved. The improved service was greatly favoured by the social changes which occurred at the end of the thirteenth century. The city gate was opened to the Franciscans, who had already become more amenable to papal authority.

The Present Pharmacy

The present pharmacy, owned by the friary, and in charge of a father who is himself a graduate pharmacist, is unique in Yugoslavia and perhaps in the world. Various attempts were made in the city's history to extinguish the centuries-old privilege of the friary. A little more than a century ago, when the kingdom of Dalmatia was incorporated in the Habsburg Empire, and Dubrovnik was reduced from its status of a free city republic to become a provincial town of Dalmatia, the privilege



Metal utensils and (right) jars of the old pharmacy

was cancelled by the Austrians. By an edict of the Emperor Francis the First (1828) it was again confirmed, with the proviso that the pharmacy should observe the official prescriptions regulating preparation and sale of medicines. To-day the urban commune of Dubrovnik numbers 18,000 inhabitants and possesses five pharmacies. Besides the pharmacy, the Franciscan friars of Dubrovnik operate also a candle factory, which makes wax candles for liturgical purposes. This is another privilege of the friary, which was confirmed by Pope Pius the Sixth in 1794. This was formerly an important manufacture when the churches and private chapels on the territory of the republic of Dubrovnik (numbering more than two hundred) were illuminated with candles made in the friary.

“Electro-plating” against Hay Fever

CONSIDERABLE publicity has been given recently in the lay Press to a treatment of hay fever at St. George's Hospital, London, S.W.1, by what is described as “electro-plating.” The ionisation treatment of hay fever, as practised at St. George's Hospital, is a modification of a treatment first suggested in the “British Medical Journal” (1931, I, 1115). Details of the modified method are given in “The Practitioner” (1936, 5, 645). Briefly it consists in passing an electric current in the presence of a 2 per cent. solution of zinc sulphate, the nostrils being plugged with gauze.

Cases which are suitable for intranasal ionisation fall roughly into three groups—hay fever with seasonal attacks; vasomotor rhinorrhoea, non-seasonal; and vasomotor rhinorrhoea during the summer months with attacks of common “cold” during the winter. All cases are subjected to a thorough examination for dental sepsis, infection of the paranasal sinuses, and obstruction to the nasal passages. These, if present, must receive appropriate treatment before the zinc ionisation is undertaken. Previous spraying of the nose with 2 per cent. cocaine solution is usual, as otherwise the treatment is extremely uncomfortable for the patient; it also reduces the risk that a violent attack of sneezing may dislodge the elec-

trodes. When a severe reaction is expected, a hypnotic may be given. An injection of five minims of adrenaline solution (1 in 1,000) is commonly given subcutaneously fifteen minutes before starting to plug the nose. The treatment is repeated after an interval of a week, two or three treatments being generally sufficient. The method may also be used prophylactically, starting about ten days before the first attack is expected.

As far as can be judged at present, the majority of patients are free from attacks for approximately a year after three, or in some cases four, treatments. If prophylactic treatments are given yearly for the succeeding two years, they may thereafter be safely omitted. Some cases relapse, but it seems probable that the attacks respond to one or two further treatments. Patients subject to “geographical” attacks—for example, during the summer holiday—are given prophylactic treatments.

The suggestion having been made that the beneficial effect of intranasal zinc sulphate ionisation might be due to the sedative action of anodal galvanism, and not to the impregnation of mucous membrane with zinc in ionic form, experiments were made using saline instead of zinc sulphate solution, but without informing the patient of variation. The characteristic symptoms were not seen; there was no delayed reaction, and no improvement in the original condition followed.



Trade Report

Where possible scales of prices of chemicals are given for bulk down to small quantities. Prices recorded for crude drugs, essential and fixed oils and coal tar products are for fair sized wholesale quantities. Qualities of chemicals, drugs, essential and fixed oils, etc., vary, and selected brands or grades would be at higher values

28 Essex Street, W.C.2, June 24

THE general tone is fairly steady with business in most markets somewhat less than usual. In the PHARMACEUTICAL CHEMICALS markets the recent changes in values are being maintained. There is no change to report in SALICYLATES. A moderate business has been moving in CRUDE DRUGS and most products are keeping fully steady to firm. BUCHU is not likely to cheapen, but may go still dearer. Restricted business at high values in new crop CASCARA SAGRADA reported. COLOCYNTH is dearer on spot. Fair demand for Russian ERGOT. Sudan GUM ACACIA is held at last week's advances. MENTHOL remains dull. Very fair inquiry for RHUBARB, the rough round quality being in demand. New crop Alexandrian hand-picked SENNA pods offering. TRAGACANTH is firm and the better grades are in restricted selection. The demand this week for ESSENTIAL OILS has been none too satisfactory. ANISE (STAR) dull and tending slightly easier. All SICILIAN OILS are being quoted by exporters for shipment immediately sanctions are raised. Prices for Californian LEMON have been advanced and supplies available are very restricted. French Guinea ORANGE is firm on spot and there is practically nothing offered for shipment; this does not necessarily mean supplies have been cleared, the market appears to be in the hands of speculators. Japanese PEPPERMINT rather quiet. The American NATURAL OIL is much firmer and a sharp advance is reported from the source.

Exchange Rates on London

THE following is a list of the chief Continental and other exchange rates at the opening on Wednesday morning:—

Centre	Quoted	Par	June 24	Value of the £
Amsterdam ...	Fs. to £	12·107	7·41	12/2½
Berlin ...	Mks. to £	20·43	12·45	12/2½
Brussels ...	Belgas to £	nominal	29·65	16/11½
Copenhagen ...	Kr. to £	18·159	22·40	24/8
Lisbon ...	Esc. to £	110	109½	19/11½
Madrid ...	Ptas. to £	25·22½	36½	28/11½
Milan ...	Lire to £	92·46	63½	13/9½
Montreal ...	Dol. to £	4·86½	5·03	20/7½
New York ...	Dol. to £	nominal	5·02	20/7½
Oslo ...	Kr. to £	18·159	19·90	21/11
Paris ...	Fr. to £	124·21	76	12/2½
Prague ...	Kr. to £	164·25	121½	12/3
Stockholm ...	Kr. to £	18·159	19·40	21/1½
Warsaw ...	Zloty to £	43·38	26½	12/2½
Zurich ...	Fr. to £	25·2115	15·45	12/2½

Bank rate 2 per cent.

Pharmaceutical Chemicals, etc.

A FAIR average business continues, with values showing no change of importance. Iodides are steady at the reduction noted last week.

ASPIRIN.—Makers' scales of prices fully maintained: home trade, ten cwt., 2s. 7d.; five cwt., 2s. 8d.; one cwt., 2s. 8½d.; 28 lb., 2s. 9d.; 14 lb., 2s. 10d.; 7 lb., 3s.; 4 lb., 3s. 2d.; 1 lb., 3s. 4d. per lb. Bulk packing free, net, carriage paid. Contracts: Over twelve months, minimum one ton; over six months, less than one ton.

BISMUTH SALTS.—Makers' scales of prices are steady, fair demand: Carbonate, B.P., one cwt., 6s. 6d.; 28 lb., 6s. 9d.; 8 lb., 7s. 3d.; less than 8 lb., 8s. 6d. per lb., with rebates on contracts for larger quantities.

BROMIDES.—Makers' and dealers' scales of prices continue at the recent advance. The home trade prices are: Potassium B.P., not less than five cwt., 1s. 7d.; not less than one cwt., 1s. 8d.; not less than 28 lb., 1s. 11d.; 14 lb., 2s. 1d. per lb. Sodium, B.P., not less than 5 cwt., 1s. 9d.; not less than 1 cwt., 1s. 10d.; not less than 28 lb., 2s. 1d.; 14 lb., 2s. 3d. per lb. Ammonium, B.P., not less than 5 cwt., 1s. 10d.; not less than one cwt., 1s. 11d.; not less than 28 lb., 2s. 2d.; 14 lb., 2s. 4d. per lb., net. 28 lb. parcels and one cwt. cases free. Distributors' prices for quantities less than 14 lb. would be at higher figures. Scales of prices for export, quoted f.o.b. London for prompt shipment, are as follows: POTASSIUM, 5 cwt., 1s. 1½d.; one cwt., 1s. 2d. SODIUM, 5 cwt., 1s. 2½d.; 1 cwt., 1s. 3d. Ammonium, 5 cwt., 1s. 4d.; one cwt., 1s. 4½d. per lb. Contracts over a period are not being booked.

CAFFEINE.—Continental makers' agreed prices: pure alkaloid, two cwt., 7s. 10d.; one cwt., 8s.; 56 lb., 8s. 2d.; smaller quantities, 8s. 4d.

per lb., delivered, 5-lb. tins free, smaller packing extra. Citrate, two cwt., 5s. 5½d.; one cwt., 5s. 6½d.; 56 lb., 5s. 7½d.; smaller quantities, 5s. 8½d. per lb., delivered. British material: pure, 56 lb., 8s. 4d.; less, 8s. 6d. per lb. Citrate, 56 lb., 5s. 9d.; less, 5s. 10d. per lb.

CALCIUM LACTATE.—Moderate inquiry, quoted unchanged: spot, one cwt., 1s. 0½d.; 56 lb., 1s. 1½d.; 28 lb., 1s. 2½d.; smaller quantities, up to 1s. 6d. per lb.

CHLOROFORM.—Makers' prices are as follows: two cwt., 2s. 5½d.; one cwt., 2s. 6d.; 56 lb., 2s. 6½d.; less, 2s. 7½d. per lb., in w-quarts of 8 lb. Packed in drums, ¾d. per lb. less. Small bottles extra, from 5d. per lb. for ¼-lb. bottles to 1d. for 2-lb. bottles. Carriage paid on minimum cwt. lots.

CITRIC ACID (B.P. CRYSTALS).—Seasonal business continues: British material quoted at 1s. per lb., less 5 per cent. discount, nominal and without engagement. Dealers' prices for imported material are competitive.

IODIDES.—Makers' reduction in the scales of prices for these salts continues at the figures recorded last week. POTASSIUM IODIDE, B.P., for quantities not less than one cwt., 4s. 6d.; 28 lb., 4s. 8d.; 14 lb., 4s. 10d.; 7 lb., 5s. 4d.; 4 lb., 5s. 10d.; smaller quantities, 6s. 6d. per lb. SODIUM IODIDE, B.P., for quantities not less than 28 lb., 5s. 6d.; 14 lb., 5s. 8d.; 7 lb., 6s. 2d.; 4 lb., 6s. 10d.; smaller quantities, 7s. 10d. per lb. IODINE, B.P., resublimed, for quantities not less than one cwt., 5s. 6d.; 28 lb., 5s. 8d.; 14 lb., 5s. 10d.; 7 lb., 6s. 4d.; 4 lb., 7s.; smaller quantities, 7s. 11d. per lb. IODOFORM, B.P., crystal, precipitated or powder, for quantities not less than 28 lb., 8s.; 14 lb., 8s. 2d.; 7 lb., 8s. 10d.; 4 lb., 9s. 8d.; smaller quantities, 10s. 8d. per lb. Sales terms: Contracts for one cwt. or more (assorted if required) with "Fall Clause," for delivery over four months. No rebate now applies. Packages: Tins, 28-lb. jars and one-cwt. cases, free. Bottles, extra or returnable within three months, carriage paid. Delivery: Carriage paid on all quantities. Re-sale: It is a condition of sale that buyers undertake not to re-sell at prices below or on terms other than those ruling at the time of re-sale.

PHENOLPHTHALEIN.—Not very much business, quotations unchanged: two cwt., 2s. 9d.; one cwt., 2s. 10d.; 28 lb., 3s.; 14 lb., 3s. 1d.; 7 lb., 3s. 2d.; smaller parcels, up to 3s. 6d. per lb.

PHENYL ETHYL BARBITURIC ACID.—Dealers report some small spot business, with prices about 25s. to 26s. per lb., in 2-lb. bottles.

PHOTOGRAPHIC CHEMICALS.—AMIDOL.—28 lb., 7s. 6d.; 14 lb., 8s. 3d.; 7 lb., 9s.; under 7 lb., 11s. 9d. per lb., in 1-lb. bottles. CHLOROQUINOL.

—1-lb. bottles, 21s. per lb. GLYCIN.—7 lb., 10s. 6d.; 1-lb. bottles, 13s. 6d. per lb. HYDROQUINONE.—56 lb., 4s. 10½d.; 28 lb., 5s.; 14 lb., 5s. 3d.; 7 lb., 5s. 6d.; 1-lb. bottles, 6s. 6d. per lb. METOL.—28 lb., 9s. 6d.; 14 lb., 9s. 9d.; 7 lb., 10s. 9d.; 3 lb., 11s. 6d.; 1-lb. bottles, 12s. 6d. per lb. ALUM (PHOTOGRAPHIC QUALITY).—1 cwt., 21s. per cwt.; 28 lb. for 6s. GOLD CHLORIDE.—15-grain tube, 52s. 6d. per doz. MAGNESIUM POWDER.—10s. per lb. PARAMIDOPHENOL HYDROCHLOR.—8s. 6d. per lb. POTASSIUM FERRICYANIDE.—14 lb., 2s. 3d.; 7 lb., 2s. 6d.; 1 lb., 2s. 9d. per lb. POTASSIUM METABISULPHITE.—One cwt., 7½d.; 28 lb., 8d.; 14 lb., 9d.; 7 lb., 11d.; 1 lb., 1s. per lb. PYROGALLIC ACID.—28 lb., 6s. 9d.; 14 lb., 7s. 6d.; 7 lb., 8s. 3d.; under 7 lb., 8s. 9d. per lb. SODIUM CARBONATE (RECRYST).—5s. cwt., 12s. 6d. per cwt.; 1 cwt., 15s. 6d. per cwt.; 56 lb. for 11s. 6d.; 28 lb. for 6s. SODIUM HYPOSULPHITE, CUBES, CRYST.—5 cwt., 16s. 3d.; 1 cwt., 18s. 6d. per cwt.; 56 lb. for 11s. 6d.; 28 lb. for 6s. SODIUM SULPHIDE (PURE).—7 lb., 1s. 3d.; 1 lb., 1s. 6d. per lb.

POTASSIUM PERMANGANATE (B.P.).—Dealers doing average business in smallish quantities: quantities in drums, 8½d. to 9½d.; druggists' parcels, from 10d. to 1s. per lb., as to quantity.

QUININE SALTS.—Convention prices were advanced as follows from June 8: sulphate, 2s. 2d.; bisulphate, 2s. 2d.; ethyl carbonate, 2s. 9½d.; salicylate, 2s. 10½d.; hydrochloride, 2s. 8½d.; bihydrochloride, 3s.; hydrobromide, 2s. 8½d.; bihydrobromide, 3s.; valerianate, 3s. 8d.; hypophosphite, 4s.; alkaloid, 3s. 0½d. per oz., carriage paid on bulk quantities; 100-oz. tins free, smaller packages extra.

SANTONIN.—Dealers' quotations for outside parcels holding at about £23 to £26 per kilo. No change in first-hand prices: not less than 50 kilos, £35 12s. 6d.; not less than 25 kilos, £36 1s.; not less than 10 kilos, £36 9s.; not less than 3 kilos, £36 17s.; not less than 1 kilo, £38 13s. 6d.; less than 1 kilo, £39 13s. 6d. Special prices are in operation for export to all markets.

TARTARIC ACID (B.P. CRYSTALS).—Seasonal demand, with quoted values steady: British makers quote at 1s. per lb., less 5 per cent. discount. Dealers offering foreign materials at competitive prices.



Crude Drugs, etc.

AGAR.—A rather slow market with spot and shipment values unchanged from the prices detailed last week.

ALOE.—Cape very firm on spot. A little more doing in Curaçao on spot. Cape, spot, 62s. 6d.; shipment, nominal. Curaçao, spot, 95s. to 110s., as to quality; shipment, 85s. per cwt., c.i.f.

Shipments from the Cape for the period January 1 to March 31, 1935, totalled 133,155 lb., valued at waarde 2,597, compared with 141,987 lb., valued at waarde 1,882 in the corresponding three months of 1935.

BALSAMS.—Market steady. *Tolu*, 1s. 9d.; *Canada*, 2s. 9d. to 2s. 10d.; *Peru*, 5s. 4d. per lb., spot.

BUCHU.—A very firm market, with supplies still further depleted. Green rounds, from 2s. 3d. per lb. and tending to advance. Ovals from 2s. per lb.

Shipments from the Cape for the period January 1 to March 31, 1936, totalled 29,731 lb., valued at waarde 1,358, compared with 78,924 lb., valued at waarde 2,717 in the corresponding three months of 1935.

CAMPHOR.—Values about unchanged, business in small spot parcels: Japanese, spot, tablets, 2s. 5d.; powder, 2s. 3d.; slabs, 2s. 2½d. per lb., ex store. Shipment, tablets, 2s. 1¼d.; powder, 2s. 0¼d.; slabs, 1s. 11¾d. per lb., c.i.f. English refined is unchanged: flowers, 1 cwt., 3s. 1d.; 28 lb., 3s. 2d.; small lots, 3s. 3d. per lb. Transparent tablets, 4 oz., 8 oz. and 16 oz., 3s. 4d.; 1 oz. and 2 oz. 3s. 5d.; ½ oz., ¾ oz. and 1 oz., 3s. 6d. per lb.; special prices for contracts and bulk quantities.

CANTHARIDES.—Inquiry has been slow this week: Russian, 6s.; Chinese, 1s. 11d. per lb., as to quantity, spot, and 1s. 6d. for shipment, c.i.f.

CASCARA SAGRADA.—Restricted shipment business has been done in the region of 44s., c.i.f., for 1936 peel, but supplies are reported unusually short. Spot, 1933 peel, 57s. 6d.; 1935 peel, if available, 53s. 6d. per cwt. A good inquiry and several parcels cleared.

CLOVES.—Quiet but steady. Zanzibar, spot, 7½d.; shipment, July-August, 7½d. per lb., c.i.f. Madagascar, in bond, 6½d.; shipment, July-August, 6½d. per lb., c.i.f.

The landings of Zanzibar in London during the week ended June 20 were 88 and the deliveries nil, leaving a stock of 1,777. From January 1 to date the landings of Zanzibar have been 2,134 and the deliveries 1,432. Landings of Madagascar for the week ended June 20 were 100 and the deliveries 107, leaving a stock of 1,890. From January 1 to date landings of Madagascar have been 1,756 and the deliveries 1,428 packages.

ERGOT.—The bold slightly wormy Russian on spot has been cleared. Some small slightly weevily now available at 3s. 8d. spot. A ton of sound Russian offered, via Hamburg, at 3s. 7½d. per lb., c.i.f.

GINGER.—Market quiet and slightly easier on spot. West African, spot, 60s.; for arrival, 56s. per cwt., c.i.f.

GUM ACACIA.—Spot supplies steadily held; shipment market quiet: spot, Kordofan cleaned sorts, 42s. 6d.; bleached, No. 1, 110s.; extra, 120s. per cwt.; shipment, Kordofan cleaned sorts, 40s. per cwt., c.i.f.

HYDRASTIS.—Steady, demand quiet. Spot, 9s. 6d.; shipment firm at 9s. 3d. per lb., c.i.f.

MENTHOL.—Market remains dull. K/S brands, spot, 13s. 3d.; in bond, 11s. 9d. Japanese shippers quote July-August at 11s. 6d. to 11s. 9d., c.i.f., with re-sellers at the lower figure. Nothing doing in the distant positions.

OPIMUM.—Fair amount of small spot business, market steady: spot, 1s. 4d. to 1s. 4½d. per unit, landed and duty paid.

PEPPER.—Market has been quiet with values for all descriptions unchanged on the week.

PIMENTO.—Spot values unchanged, easier forward. Spot, 7d. per lb.; shipment, June-July, 56s. per cwt., c.i.f.

RHUBARB.—Market continues fully steady. Shensi pickings, on spot, at 3s. per lb. Good inquiry for rough round; quoted at 1s. 5d. to 1s. 6½d. per lb., as to quality. No Canton available.

RUBBER.—Values advanced, fair business, market closing steady. Standard ribbed smoked sheet: spot, 7½d.; July, 7½d.; August, 7½d.; September, 7½d.; October-December, 7½d.; January-March, 7½d. per lb.

SEEDS.—ANISE.—Spot, duty paid, Spanish, 56s. 6d.; Bulgarian, 29s. 6d. CANARY.—New crop Mazagan for July-August shipment, 22s. 6d., c.i.f., quoted. CARAWAY.—Market a little easier. Dutch, spot, 38s. 6d., duty paid. CORIANDER.—Morocco old crop, on spot, 22s., duty paid. New crop, for July shipment, 11s. 9d., c.i.f. Business reported. CUMIN.—Spot, Malta, 46s., and Morocco, 42s. 6d., duty paid. FENUGREEK.—Morocco, spot, 13s. 6d., duty paid. FENNEL.—Indian, spot, quoted at 32s. MUSTARD.—English, 20s. to 29s. 6d. per cwt., according to quality.

SENNA.—Some new crop Alexandrian hand-picked pods are available, with good colour first at 3s. 9d. to 4s. and good seconds from 2s. 6d. to 2s. 9d. per lb. No selected pods offering.

TRAGACANTH.—Market continues firm with shippers reporting purchasing very difficult at the source. No. 1 white firm at £31 and

No. 2 £26 to £27, with No. 3 very scarce here at £23 to £24 per cwt. Lower grades also in demand with reds at 90s. and amber leaf at £5 to £6 per cwt.

WAX.—BEES'. Values unchanged, market rather dull. Calcutta, bleached, spot, 135s.; afloat, 130s.; shipment, 122s. 6d., c.i.f. Abyssinian, spot, 120s.; in bond, 108s.; shipment, 106s. c.i.f.; Benguela, spot, 120s.; shipment, 106s., c.i.f. Conakry, spot, 106s., shipment, 107s. per cwt., c.i.f. Dar-es-Salaam, spot, 120s.; shipment, 117s. per cwt., c.i.f. CARNAUBA.—Shipment quotations are steady. Fatty grey, spot, 157s. 6d.; afloat, 150s.; shipment, June-July, 148s. 6d., c.i.f. Chalky grey, spot, 160s.; shipment, June-July, 150s., c.i.f. Primeira, spot, good quality, 212s. 6d.; afloat, 205s.; shipment, June-July, 196s., c.i.f. Mediana, spot, 205s.; shipment, 192s. 6d. per cwt., c.i.f.

Essential Oils, etc.

BUSINESS has been on the quiet side. Sicilian oils are being offered from the source for shipment immediately sanctions are raised. American peppermint is dearer and firm. French Guinea orange is firm.

ANISE (STAR).—Market dull and tending slightly easier: spot, leads, 2s. 6d.; tins, 2s. 4d.; drums, nominal per lb., ex store; shipment, drums, about 1s. 10d. per lb., c.i.f.

BERGAMOT.—Spot market is dull with quotations about 8s. 3d. to 10s. 3d. per lb., as to brand, quantity and seller. Shipment offers for immediate despatch when sanctions are raised are at about 7s. 5d. per lb., c.i.f.

CASSIA.—Market remains flat. Spot, about 3s. 2d.; shipment, about 2s. 6d. per lb., c.i.f., in drums.

CITRONELLA.—Market remains quiet and steady with values as detailed last week.

EUCALYPTUS.—The spot market is firm and shipment strong: Australian, 70 to 75 per cent., 1s. 2d. to 1s. 2½d.; 80 to 85 per cent., 1s. 3d. to 1s. 3½d. per lb. landed; higher prices for small lots on spot. Spanish, 70 to 75 per cent., 1s. 3½d. per lb. ex store.

JUNIPER BERRY.—Suppliers are finding some modest business, with prices ranging from 2s. 10d. to 3s. per lb., as to quality.

LAVENDER.—Market remains dull and irregular on quotation. The source reports that with the recent rains the plants are well developed and, with plenty of sun during the next few weeks, the flower crop should be good: 50 to 52 per cent., 29s. 6d.; 48 to 50 per cent., 27s.; 40 to 42 per cent., 22s.; 38 to 40 per cent., about 20s.; 36 to 38 per cent., 18s. per lb., landed, for good brands. Lavandin is quoted 11s. to 12s. 6d. per lb.

LEMON.—Spot market for Sicilian hand-pressed of little interest with holders asking anything from 8s. to 9s. 6d. per lb., as to quantity, brand and seller. Shipment offers at 6s. 4d., c.i.f., for hand-pressed and 5s. 10d. for machine made, for despatch when sanctions are raised. Californian oils have been advanced and are in very restricted supply, as follows: cold pressed, 4s. 9½d., an advance of 15 cents. Distilled, regular quality, small drums, 3s. 9½d., an advance of 11 cents per lb. No large drums available.

MANDARIN.—Shipment offers at 16s. 2d. per lb., c.i.f., for despatch immediately sanctions are raised.

ORANGE.—Sicilian sweet for shipment immediately sanctions are raised quoted at 11s. 6d., c.i.f., and bitter at 7s. 2d., c.i.f. French Guinea on spot firm at 3s. 4½d. to 3s. 6d. per lb., in drums, and more for small lots. Shipment firm with practically nothing offering. There appears to be some doubt about an actual shortage, it being suggested that the oil is in strong hands. Californian oil unchanged: spot, one case, 3s. 4½d.; two or more cases, 3s. 2d.; drums, 3s. 1d. per lb.

PATCHOULI.—Some very poor quality oil is reported to be offering for shipment at cheap prices. Good Singapore oil is fully steady at former rates.

PEPPERMINT.—A modest consuming business on spot at about 5s. 10½d. to 6s. per lb. Rather more doing in oil afloat for which 5s. 10d. is asked. This is above spot parity and would suggest the inquiry for this oil is from short sellers. A sharp increase in the American oil is recorded, the various sources advising from 5 cents up to 25 cents increase with the position very firm. Natural oil, in drums, up to 57 per cent. menthol, 2 dollars 25 cents; 50 per cent., 2.10, and 46 per cent., fully 2 dollars per lb., c.i.f.

SANDALWOOD.—Genuine East Indian Mysore, 19s. per lb., in one-case lots on spot; practically no second-hand offerings. English-made East Indian, 22s. 6d. to 25s. per lb., as to quantity. English-made West Indian, cwt. lots, 5s. 10½d.; 56 lb., 6s. 1½d.; 14 lb., 6s. 4½d. per lb. Australian oil continues steady at the recent reduction: 5 cases, 14s. 6d.; one case, 14s. 9d.; 7-lb. tins, 15s. 3d. per lb.

SPIKE.—Holders of genuine fine quality Spanish oil are asking 3s. 9d. to 4s. per lb., with offers on the market at a good deal less.



Correspondence

Letters should be written on one side of the paper only. Correspondents may adopt an assumed name, but must in all cases furnish their real name and address to the Editor.

Physiology and Pharmacy

SIR,—It is with diffidence that I would attempt a further trespass on your hospitable columns and literally lift the gauntlet which Mr. R. Cecil Owen persists in throwing down with such determined despondency. To review, *seriatim*, his observations which are too sincere to be designated *obiter dicta*, I would join issue on his assumption that because many remedies are standardised it portends the decline of dispensing to the point of extinction. The first pharmacopœia was designed to compel uniformity. This did not preclude extemporaneous prescribing. Too many factors, incalculable and unascertainable, are involved in treatment to require exactitude in prescribing. A reasonable degree of pharmacological rectitude will suffice. Insulin and tuberculin demand a careful and almost arithmetical accuracy, but this is exceptional. The public has for generations been schooled in the cult of the eight-ounce bottle, and it will not be in our time alienated from its pharmaceutical heritage. The chemist still dispenses while he reads, copies and numbers a prescription and re-labels the preparation even though it be proprietary. Admittedly, it is difficult to prohibit a doctor from dispensing his own prescription; but while no adamant reform in this respect could be easily achieved, the general practice is not incapable of statutory correction. Mr. R. Cecil Owen refers to unqualified competition. This inspires sympathy. Here, however, the pharmacist shares a grievance with the doctor. The quack flourishes unabashed but rarely unabandoned. It reflects the laxity of legislation so ridiculous in the statute-book ponderous with a surfeit of rules and regulations governing the professional conduct of the chemist. Rigorous in its application, relentless in its quest of inadvertent infringements of the perplexing Pharmacy and Poisons Act, the legislature imposes an inspectorship which, however tactful it may be, presupposes in the chemist a capacity for carelessness which his final examinations disproved. Yet with all these hindrances to his professional progress, these aspersions on his commercial integrity, these depredations on his dispensing and these incursions into his sanctuary, the chemist has survived and—though I use the word with trepidation—multiplied.—I am, etc.,

JOHN SHIEL,

L.R.C.P., L.R.C.S., L.M., Ph.C., Barrister-at-Law.
Dublin.

The Chemist's Dilemma

SIR,—I compliment you on the editorial under above heading in the *C. & D.* of June 20. You have a way of getting down to "brass tacks" in practical business which is very refreshing. Chemists everywhere will endorse your statement that the request for a signature very often drives the customer to another establishment where the regulations may be less stringently kept. That doctors are allowed to supply barbiturates, etc., whilst their premises are exempted from inspection, is nothing short of a scandal. Reference is made in another publication to the fact that the inspection of pharmacies brings us into line with most Continental countries, but there is no suggestion that endeavours will be made to restrict the supply of medicine to pharmacists as in other countries. Unless this becomes an accomplished fact our progress, pharmaceutically, will be of the "half-lop" variety (one ear up and one ear down). It is even hinted that soon the unhappy employer of an apprentice may sample the delights of an inquisition, but so far the fee has not been disclosed! Let us hope the new members of the Council will join in demanding that a stop be put to "petty fogging" interference with the men and women who foot the bill, and, if left alone, carry on a pharmaceutical service as good as that in any Continental country.—Yours, etc.,

B. PRACTICAL (22/6).

Miscellaneous Inquiries

When samples are sent particulars should be supplied to us as to their origin, what they are used for, and how. We do not undertake to analyse and report upon proprietary articles nor to publish supposed formulas for them.

T. H. B. (19/6).—CHLORINATION OF WATER.—For the treatment of a swimming pool your customer should study "The Purification of the Water of Swimming Baths," and for drinking water "Chlorination of Water Supplies" (Memo. 179 W). These are issued by H.M. Stationery Office, Kingsway, London, W.C., at 1s. and 1d., respectively.

M. C. A. (6/6).—PERMANENT WAVING LOTIONS.—The following recipes, which do not contain ammonia, are given in "Pharmaceutical Formulas," Vol. II:—

I				
Potassium carbonate	...	...	...	2 dr.
Borax	...	...	...	2 dr.
Ammonium carbonate	...	...	...	2 dr.
Water	...	...	...	20 oz.
II				
Potassium carbonate	...	...	...	40 gm.
Borax	...	...	...	10 gm.
Mucilage of tragacanth	...	...	...	100 c.c.
Perfume	...	...	...	a sufficiency
Rose water to produce	...	...	...	1000 c.c.

Dissolve the borax and potassium carbonate in 500 c.c. of rose water, mix the other ingredients, and add. Make up to volume.

J. M. W. (12/56).—CALAMINE LOTION.—This can be prepared as follows and shakes up quite easily: Triturate the calamine and zinc oxide with a small quantity of lime water and ten minims of liquid extract of quillaia. Add the ichthyol to this. Shake the olive oil with another ten minims of quillaia extract and incorporate with the concentrated calamine lotion. Transfer to a bottle and add lime water to make up to volume.

T. W. (2/6).—SMOKE.—A preparation on the following lines which gives a dense black smoke suitable for a "fire dive":—

Pitch	...	...	...	...	4 parts
Borax	...	...	...	...	1 part
Potassium nitrate	...	...	...	...	2 parts

C. K. G. (16/6).—WATERPROOFING CLOTH.—A rubberless waterproofing solution for treating cloth is as follows:—Dissolve 3 oz. of alum in half a gallon of water and soak the fabric in this solution, then immerse it in a solution of 4 oz. of lead acetate in half a gallon of water. When dry the white powder is removed by brushing.

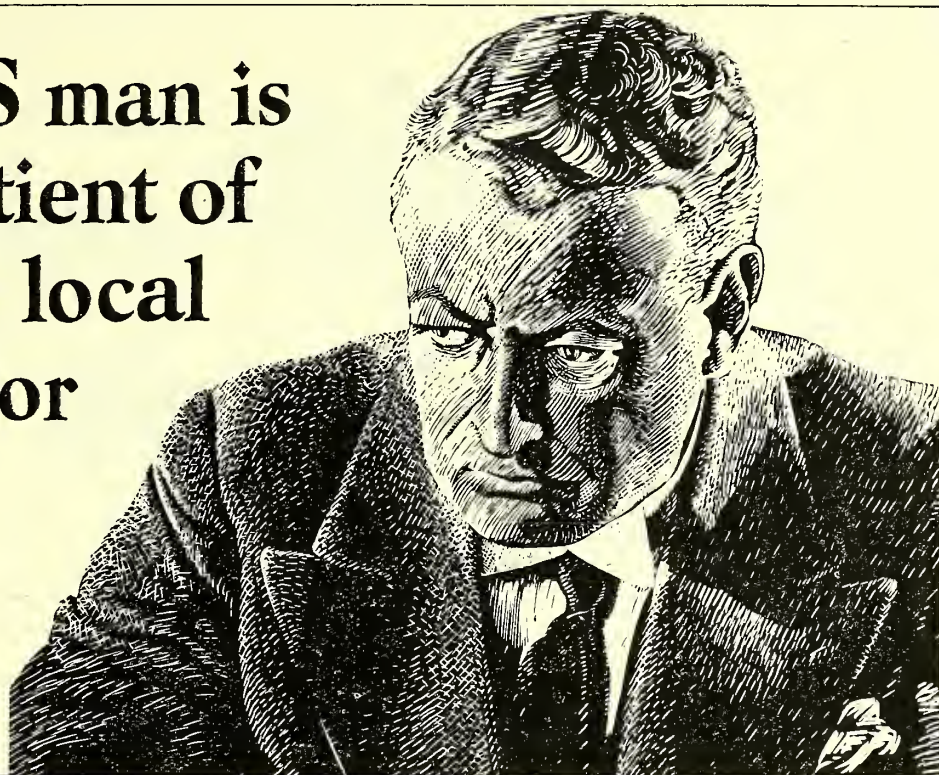
Retrospect of Fifty Years Ago

Reprinted from
"The Chemist and Druggist," June 25, 1886

Lister's Antiseptic Surgery

Since its introduction by Sir Joseph Lister the antiseptic treatment has undergone some important modifications, and although carbolic acid still retains its reputation as an antiseptic generally applicable and safe, many important bodies have been added to the list. Professor Lister has all along been among the first to take advantage of any new development of his system by other surgeons, or of substances proposed as antiseptics. It will be remembered that Mr. Martindale stated at the Aberdeen Conference that the Professor was experimenting with double chlorides of ammonium and mercury in order to replace the preparation of albumen and corrosive sublimate which has extensively been used in the form of gauze. It is now stated . . . that he is at present making extensive trial of various non-volatile antiseptics, double chlorides, and double cyanides of mercury chiefly, and with results which appear to be most satisfactory.

**THIS man is
a patient of
your local
doctor**



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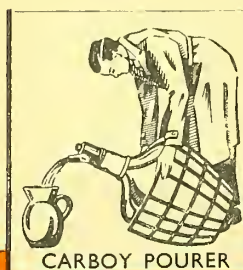
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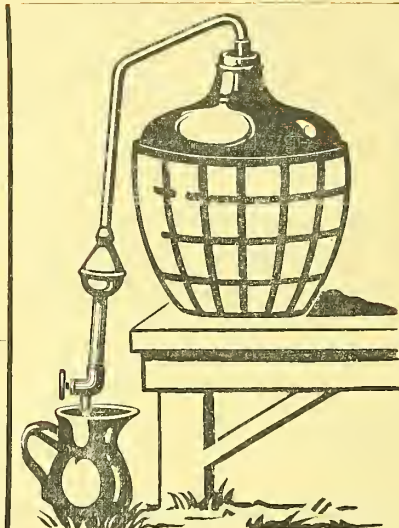
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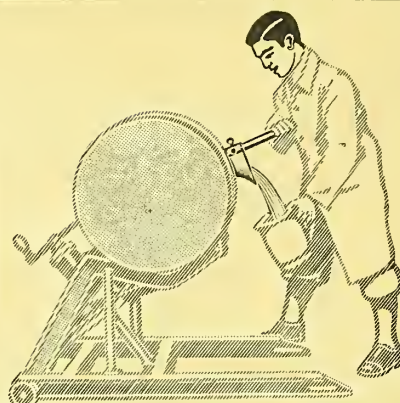
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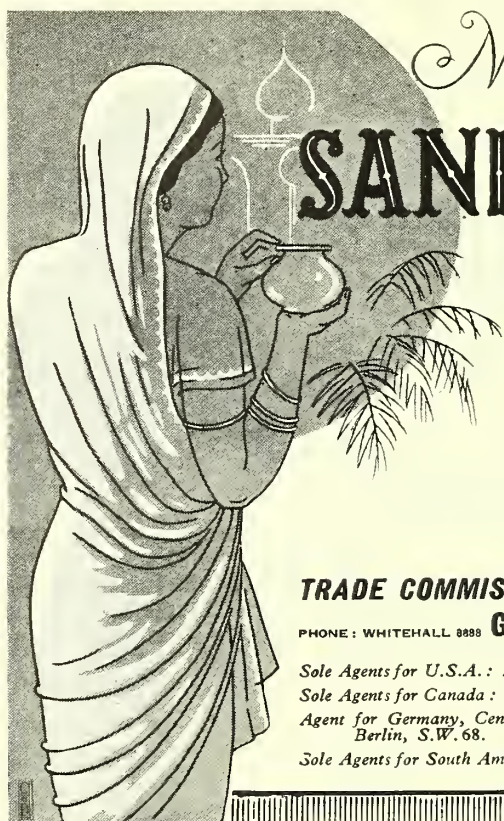
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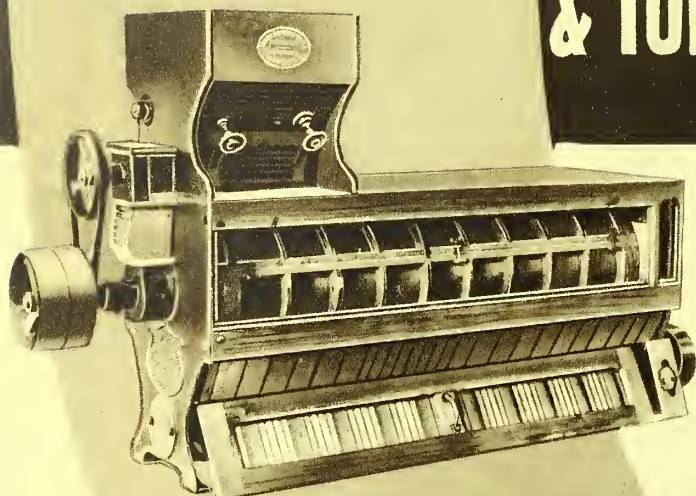
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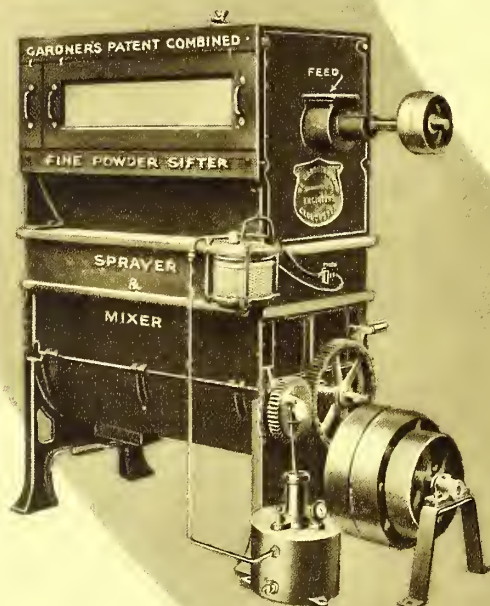
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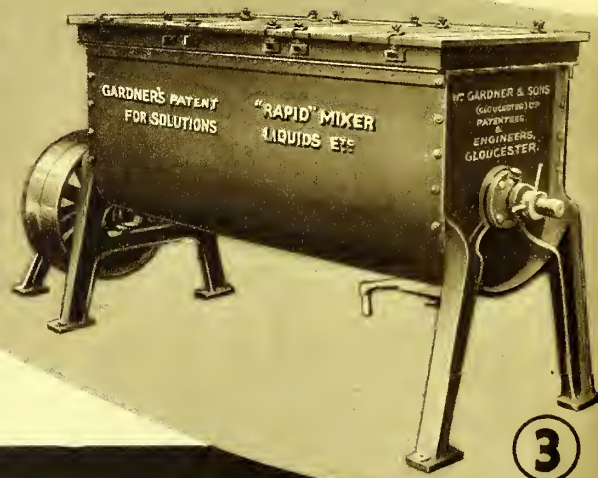
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①



②



③

① GARDNER Patent "QUICK-CHANGE" FINE POWDER DRESSER

The first requisite for a toilet powder is that it shall be impalpably fine, smooth textured, free from all trace of grittiness and all impurities.

The machine for ensuring these qualities in the highest degree, in the least time and at the lowest cost, is the Gardner Patent "Quick-Change" Fine Powder Dresser.

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② GARDNER Patent Combined FINE POWDER DRESSER, SPRAYER and Patent Rapid MIXER

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Made in sizes from those suitable for the smallest maker up to the size used by the largest firms.

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GARDNER'S MACHINERY

4 GARDNER Patent "Rapid" SIFTER and MIXER with or without Sprayer

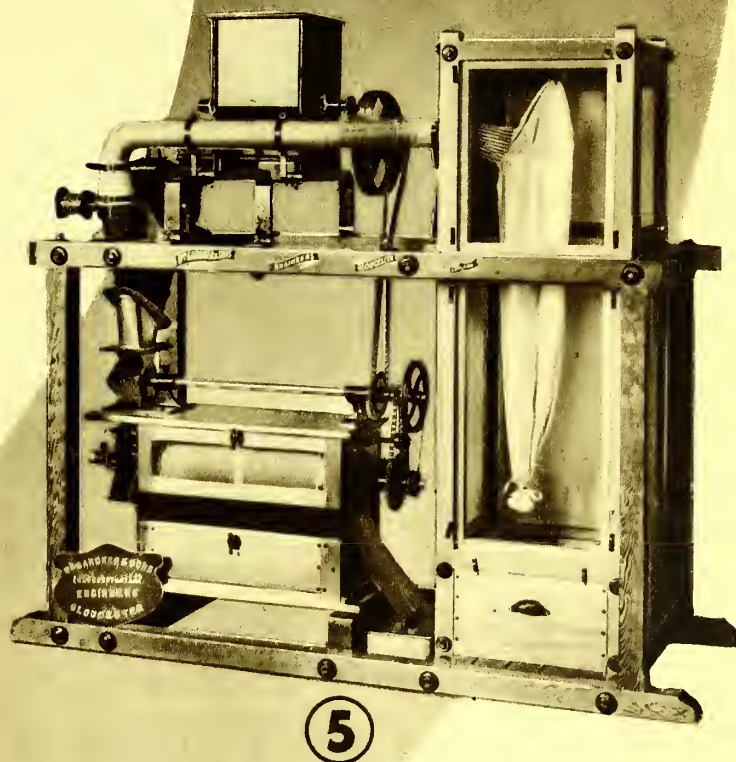
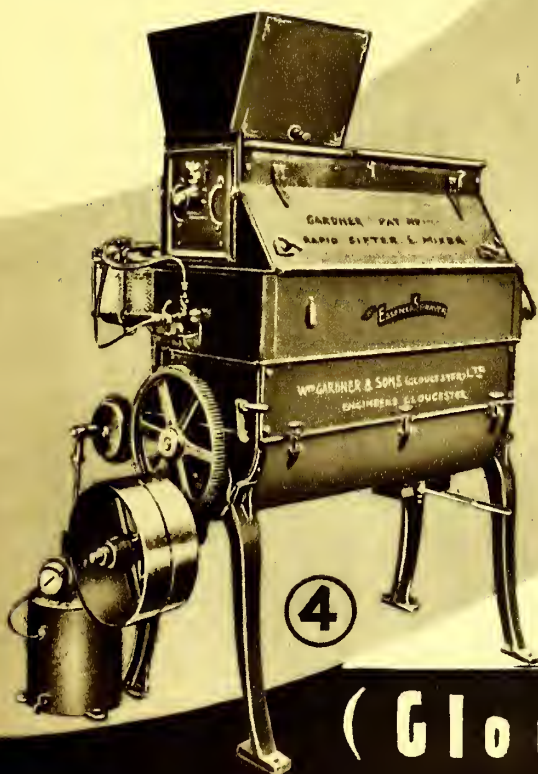
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5 GARDNER Patent Combined FEEDING, GRINDING, SIFTING and DUST SEPARATING PLANT

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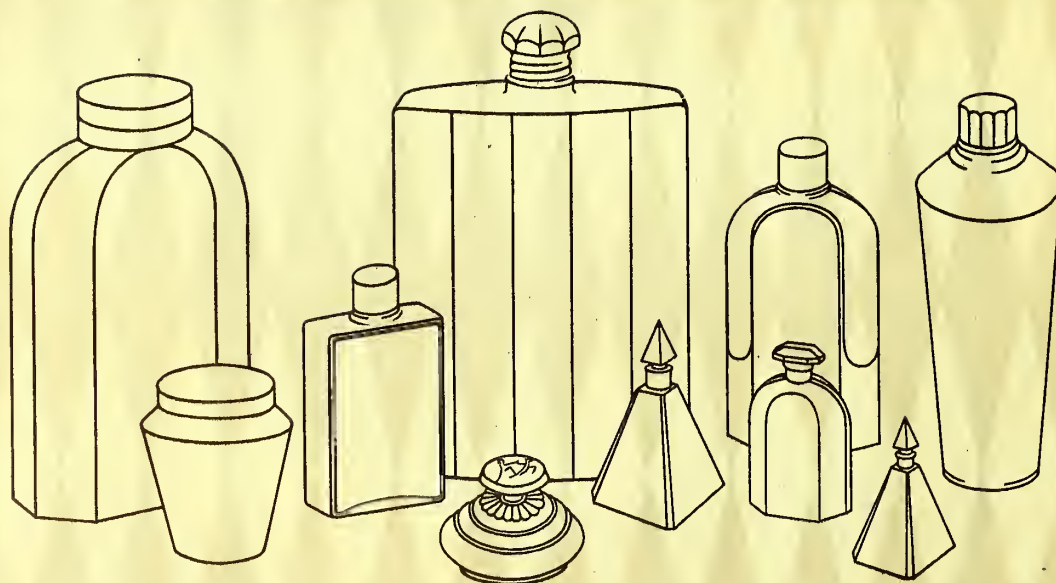
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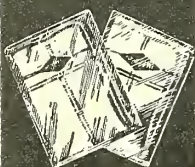
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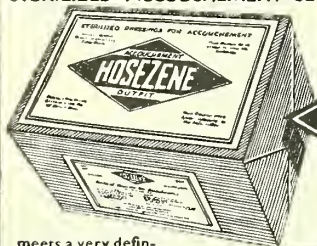
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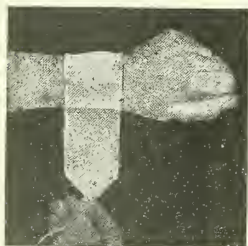


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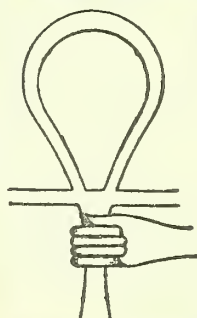


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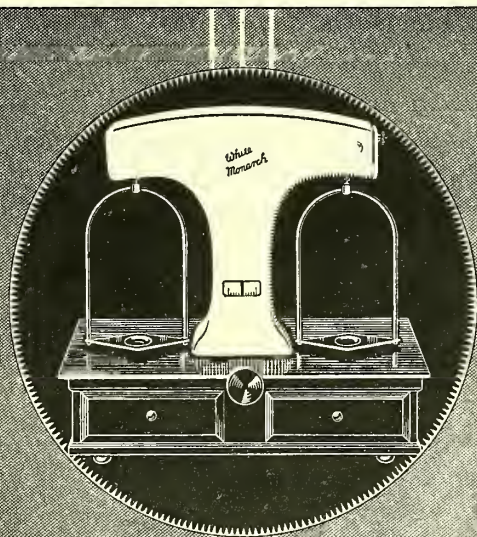
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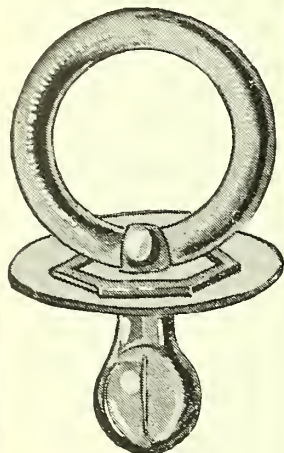
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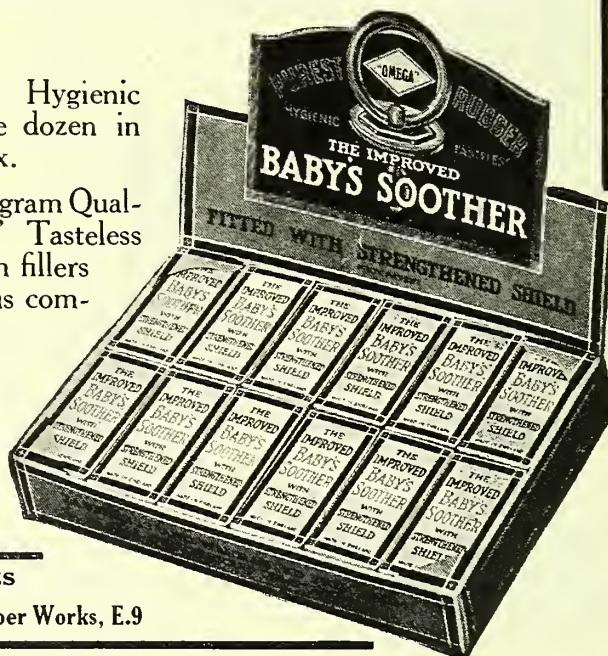
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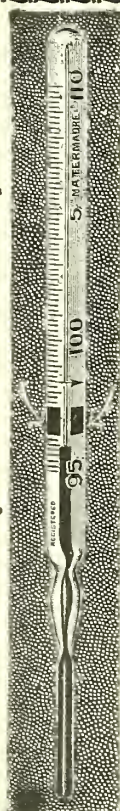
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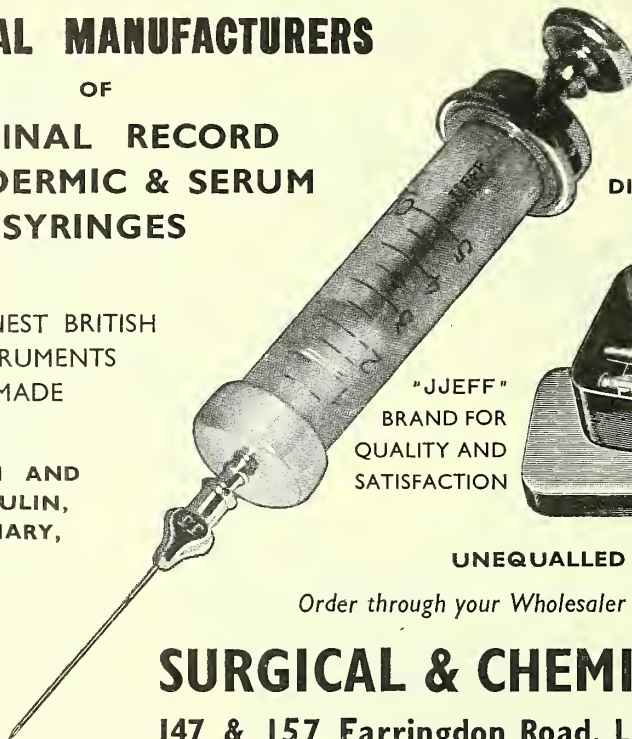
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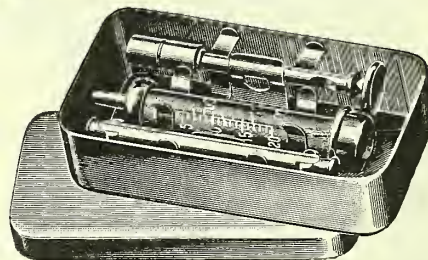
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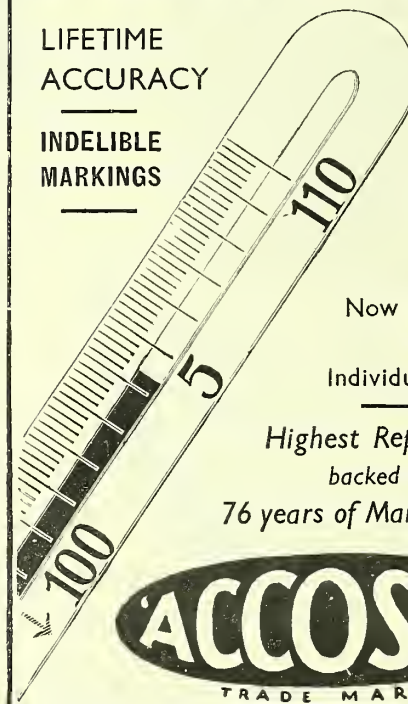
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CARTONS OF EITHER 3 or 6 doz. BOTTLES
THROUGHOUT THE RANGE

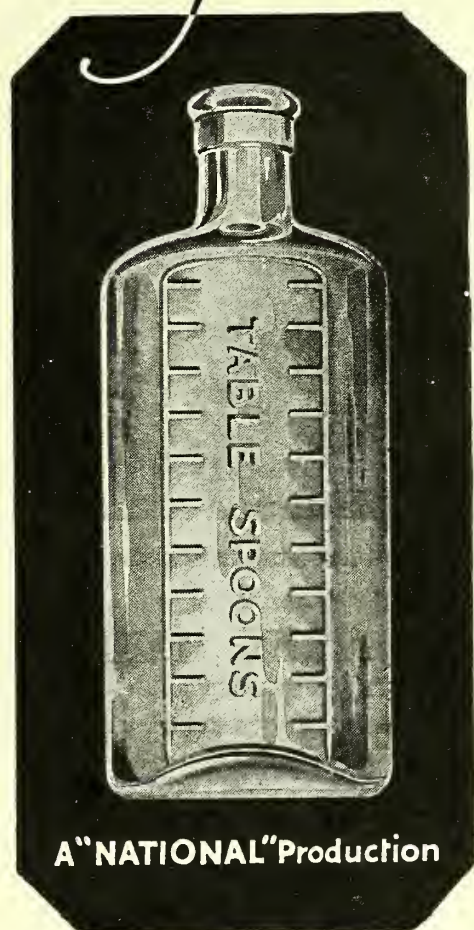
ALSO

Cork mouth Bottles WASHED & PAPERED

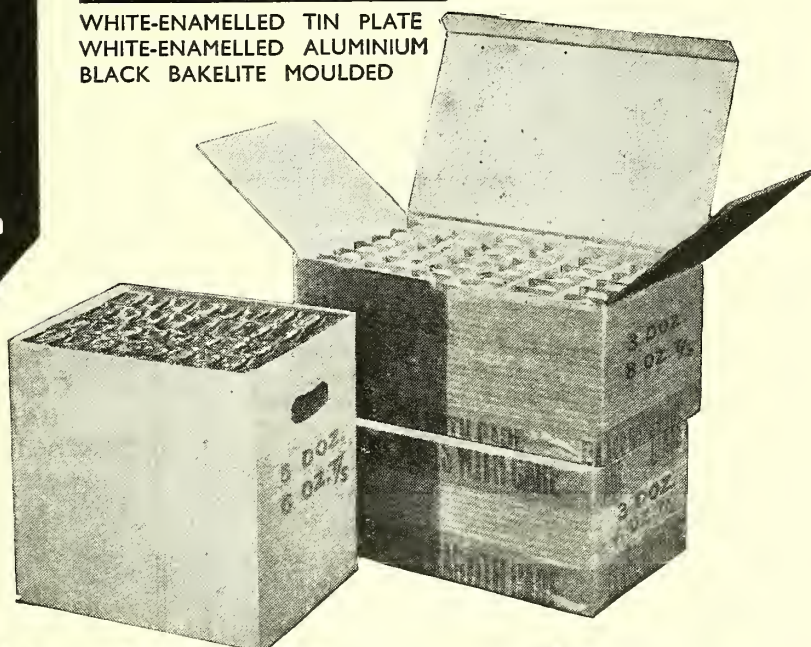
Screw " " WASHED & CAPPED

SCREW CAPS SUPPLIED in

WHITE-ENAMELLED TIN PLATE
WHITE-ENAMELLED ALUMINIUM
BLACK BAKELITE MOULDED



*May we advise
Name and Address of
your nearest
"National"
distributor?*

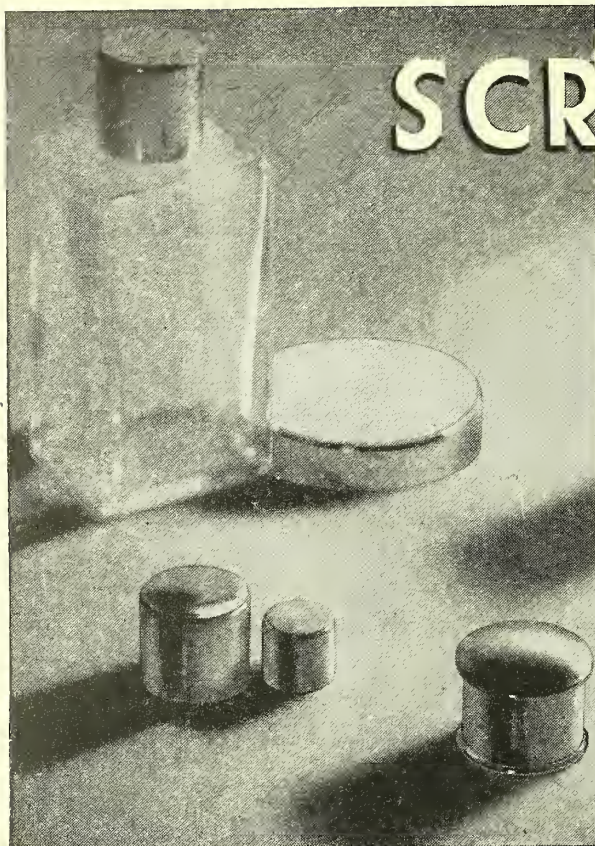


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WORKS:
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(WHOLESALE ONLY)



SCREW CAPS

WITH CONCEALED THREADS
IN ALL SHAPES AND SIZES

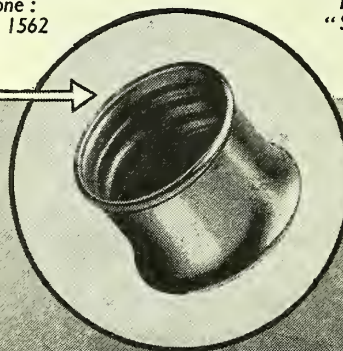
*Supplied in all Metals in
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THE
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1/3 & 3/-
Single Dose 2d. ea.
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Sole Proprietors:
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Special prices for quantities.

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Thousands will suffer from sunburn this summer. Protect yourself with 'Beach' Sun Tan Lotion—a pleasant, NON-OILY preparation which prevents and relieves sunburn and encourages a smooth, even tan. Small bottle 1/6, large 2/6.

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beach
Apply freely before sunbathing. Prevents burning and encourages an even tan. Relieves sunburn. Non-oily. Dries instantly.
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Prices :

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Less usual discounts.

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compact and easy to locate



IN YOUR HAND

comfortable and clean pouring

WITH INDESTRUCTIBLE SUNK ENAMELLED LABELS

This shape of flat bottle stands more compactly on your shelves than any other, and is boldly labelled on the narrow front edge with etched-in, indestructible enamelled lettering—white for liquids, black for powders.

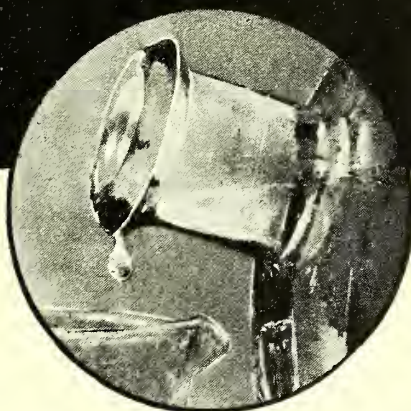
Supplied in sizes from 4 to 40 ozs. narrow or wide mouth.

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ROTHERHAM, YORKS.



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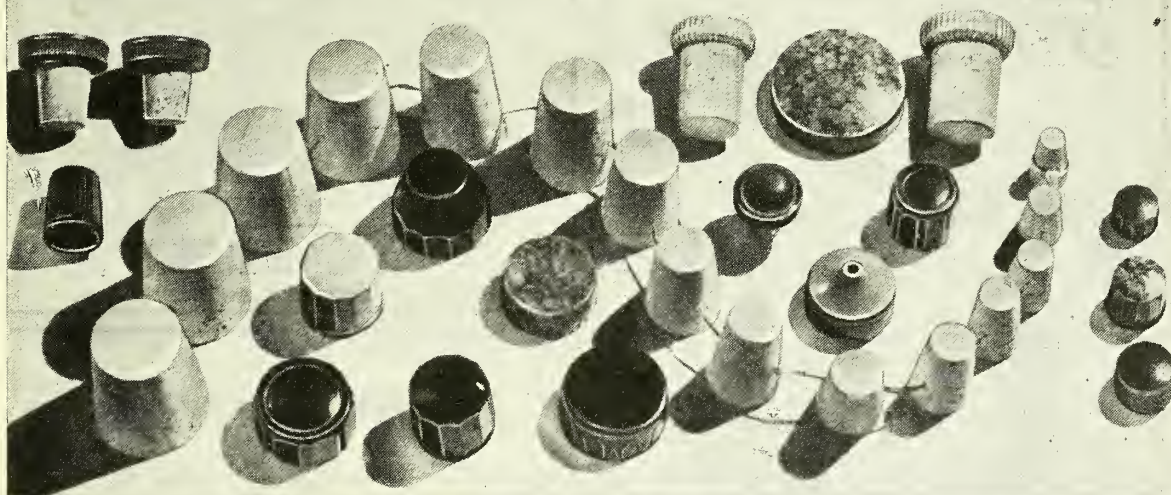
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our prices will interest you . . .



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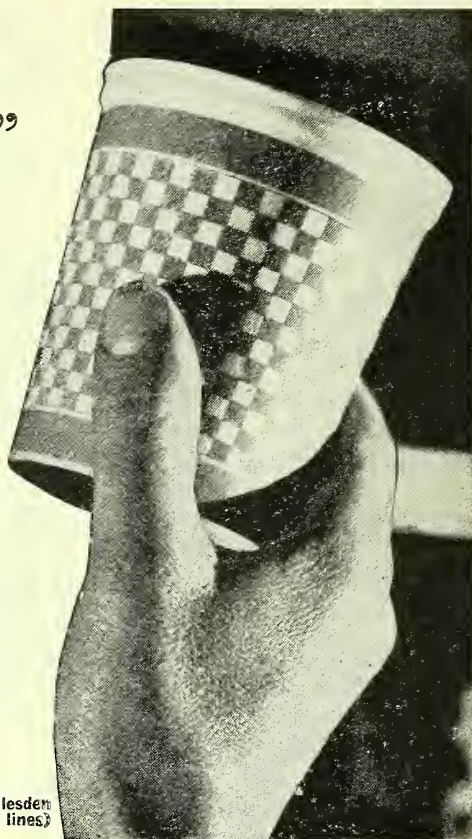
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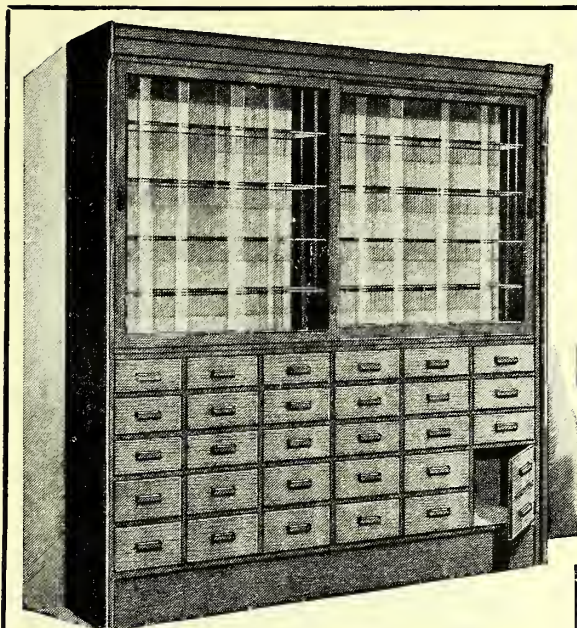
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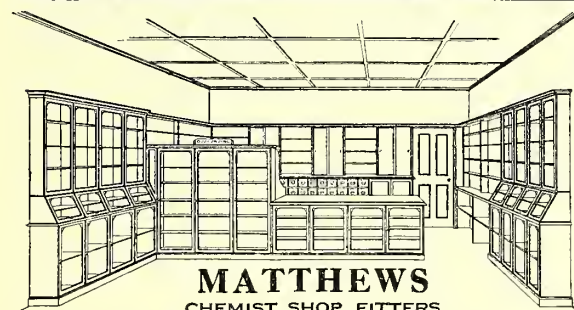
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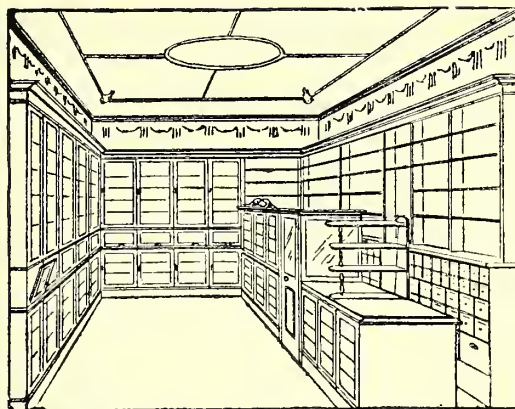
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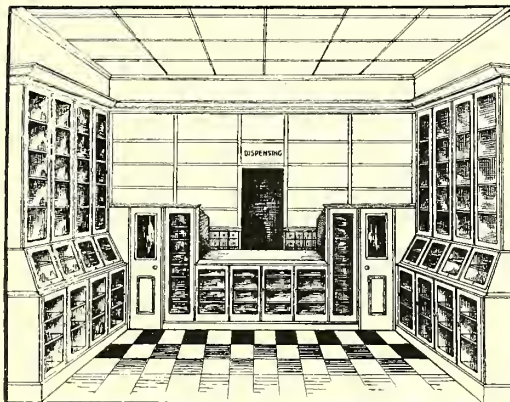


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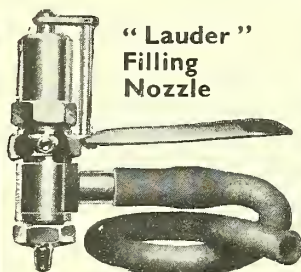
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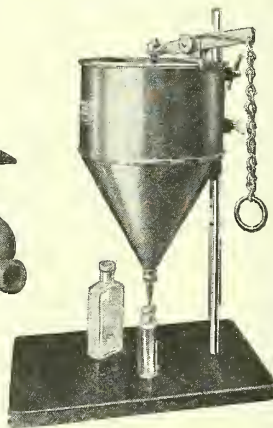
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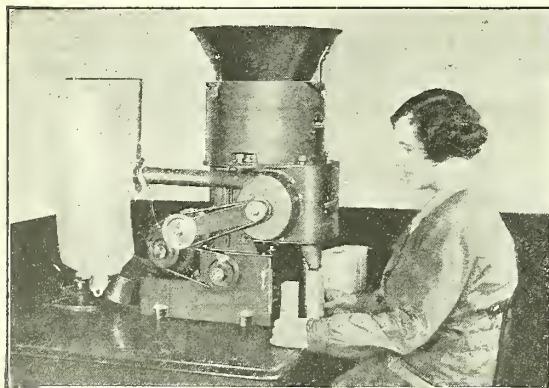
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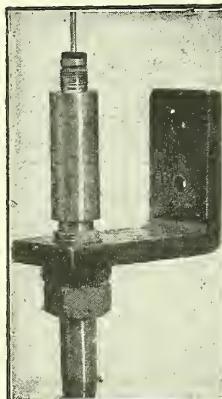
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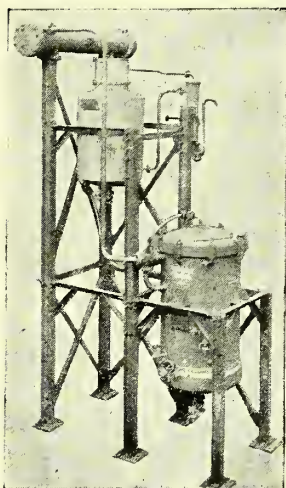
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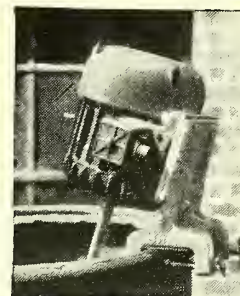
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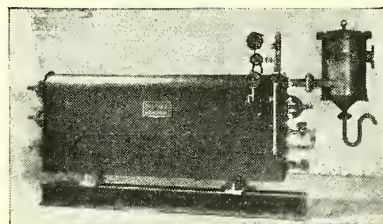
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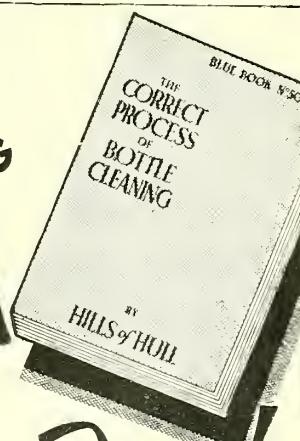
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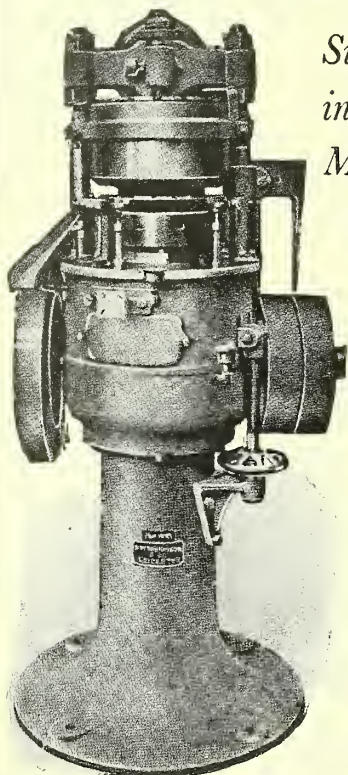


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*Single Punch Machines
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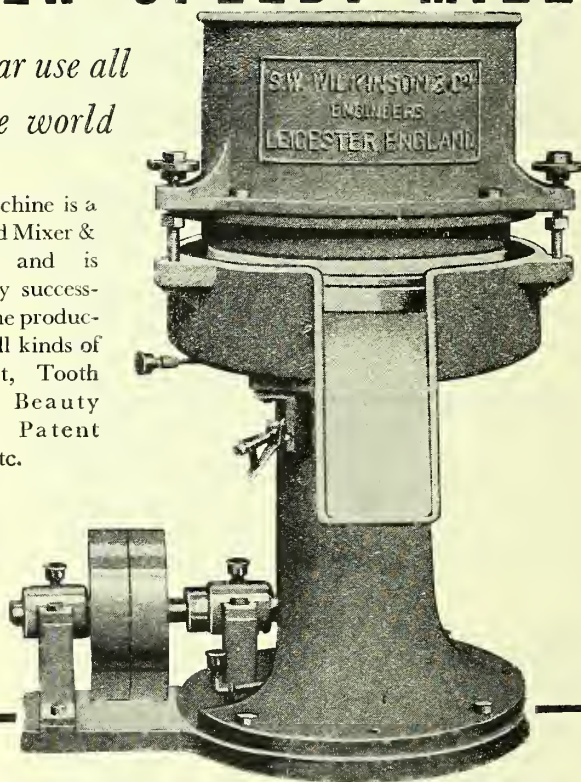
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Telegrams: Rileys, Hapton

'Phone: Padiham 290-1

"SURE SHIELD" SUMMER LINES**GRAPE FRUIT****THIRST QUENCHERS****Pastilles & Citrates**of outstanding
Quality and Popularity

CITRATE. 4 oz. Bottles, 7/- per doz.
1/4 per lb., 28 lbs., 1/3 per lb.
Fine Granular Citrate in 6d. Tins,
4/6 per doz, 6 doz. lots, 4/3 doz.



PASTILLES.
4 lb. Free Jars,
1/7 per lb.
7 lb. Free Jars,
1/6 per lb.
2d. pkts. (2
doz. Outers),
1/5 per doz.,
16/- per gross.
4 oz. Cello-
phane pkts.,
4/3 per doz.,
48/- per gross.

**THOMAS GUEST & CO LTD**Manufacturers of "SURE SHIELD" Specialities. Popular lines
that are consistently advertised in the National Press, etc.**CARRUTHERS STREET, ANCOATS, MANCHESTER 4**
LONDON DEPOT: 15-16 JEWRY STREET, E.C.3 'PHONE: ROYAL 1911



PACKING FOR BIGGER BUSINESS

INCREASED
UTILITY
AND FINER
APPEARANCE
MEAN
INCREASED
SALES

Bakelite materials offer to the designer advantages and opportunities not obtainable with older materials. They are not subject to the limitations of form, colour, finish and mechanical strength usually associated with earlier constructional materials. Bakelite moulded containers and bottle caps are clean, colourful, non-fragile. If made from the correct grade of material, they do not affect, nor are they affected by, their contents. A copy of our leaflet, "Bakelite Moulding Materials for Modern Packaging," will be sent to you at your request, and we shall be pleased to supply you with the names and addresses of moulders of caps and containers.

BAKELITE



BAKELITE LIMITED, 68 VICTORIA STREET, LONDON, S.W.1
Telephone: VICTORIA 5441 (4 lines) Works: BIRMINGHAM (Est. 1910)

CHEMISTS LABELS by the MILLION

SLIPS

CIRCLES

1/2 oz. 3/3 per 1,000
5,000 3/- per 1,000
1 oz. 4/3 per 1,000
5,000 4/- per 1,000
CORK TOPS
5,000 3/- per 1,000
10,000 2/9 per 1,000

1,000 2/3 per 1,000, 5,000 2/- per 1,000
In various lots of 1,000 each

DISPENSING LABELS, LARGE

1,000 7/- per 1,000, 2,000 6/- per 1,000
3,000 5/6 per 1,000, 5,000 5/- per 1,000
MEDIUM 1,000 5/- per 1,000, 5,000 3/6 per 1,000
SMALL 1,000 4/- per 1,000, 5,000 3/3 per 1,000

RED INK 6d. per 1,000 extra (except Cork Tops)

Steel Adams

PHONE : CENTRAL 2995

GAYTHORN WORKS, JORDAN STREET,
MANCHESTER, 15

F. ROBINSON, Dispensing Chemist,
129, ALEXANDRA ROAD,
MANCHESTER.

J.N. PICKUP, M.P.S.,
Dispensing Chemist,
104, WATER LANE, WILMSLOW.

SPENCER, M.P.S.,
Dispensing Chemist,

TOTTINGTON

POISON.

FOSTER M.P.S.,

DISPENSING CHEMIST,

FOXTON, FLYDE.

WILKINSON

SHAKE THE BOTTLE

The Mixture

SHAKE THE BOTTLE

SHAKE THE BOTTLE

SHAKE THE BOTTLE

SHAKE THE BOTTLE

SHAKE THE BOTTLE

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AE WORTHINGTON

Dispensing Chemist,

Hamilton Pharmacy,

Blackpool.

Blackpool.

Blackpool.

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MAGNESIA

Frank Heap

Chemist & Optician

8, Church St., Haslingden

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WE MAKE EVERY TYPE OF GLASS CONTAINER

WHOLESALE &

EXPORT ONLY



We are actual manufacturers and invite your enquiries for Dispensing, Emulsion, Embrocation, Feeding, Milk, Perfume, Poison, Sauce and Sweet Bottles, Jam Jars, etc.

Clean—sparkling—well finished bottles which make all the difference to your finished product—our prices are distinctly interesting. Hand or machine

made for cork, sprinkler or screw neck. An immense range of moulds of unique design is at your disposal. We shall welcome your next enquiry. . .

LAX & SHAW LTD

Regd. Office: Albert Glass Works, Hunslet, Leeds, 10. 3 Factories: Albert, Clarence & Donisthorpe
Phone: 21568 (2 lines) • Grams: "Feeders, 'Phone," Leeds

Dr. Scholl's

FOOT COMFORT WEEK

Inaugurates a Record Year

for 1936

Remember, the nation-wide foot health campaign which appeared during Dr. Scholl's Foot Comfort Week was only a part of the all-year advertising programme devised to promote sales of Dr. Scholl's Foot Comfort Appliances and Remedies.

44,000,000 Scholl advertisements were scheduled for Foot Comfort Week alone.

Imagine, therefore, the huge number of Scholl advertisements which will appear during one whole year.

And remembering that 95 per cent. of people have foot trouble—you can realise the large potential market for Dr. Scholl's Foot Comfort Appliances and Remedies.

This tremendous stimulation of public demand can be profitably turned into sales and profits by you. It requires your co-operation. Display and recommend Dr. Scholl's Foot Comfort Appliances and Remedies at every opportunity.

Sales reports received from various parts of the country indicate the huge success of Foot Comfort Week.

Record business is paving the way towards another record—A RECORD YEAR.

We know that we can rely on your continued enthusiasm to bring success to both you and ourselves.

Onward, then, toward a RECORD 1936.

THE SCHOLL MFG. CO. LTD.

182-194, ST. JOHN STREET, LONDON, E.C.1

ZEAL *Clinical Thermometers*

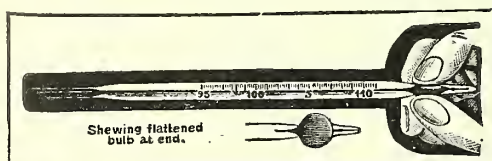
THE FINEST CLINICAL THERMOMETERS

- EXPERT SUPERVISION
- GUARANTEED ACCURACY
- RAPID REGISTRATION
- PROMPT DELIVERY

HOUSEHOLD
THERMOMETERSINDUSTRIAL
THERMOMETERS*Imitations are dangerous***THE REPELLO**

No shaking down required

Regd.



G. H. ZEAL LTD. Morden Road, Merton, London, S.W.19
 Telephone No. Liberty 2283 (3 lines). Cables "Zealdom, London."

To BUYERS of TRUSSES!

The most complete up-to-date facilities for the manufacture of **RUPTURE APPLIANCES** of every known English and American pattern are operating at

**BLACK BULL WORKS,
MARKET ROAD, LONDON, N.7**

Hard Rubber, Celluloid, Leather and Mole

Covered and Elastic Band Trusses, under the

"MASTER"
BRAND
TRADE MARK



are sold in all
Markets of the
World.

"KO-RALLIUM." A new flexible covering for Steel Springs, is immune from Warping, Cracking, Shrinking or Peeling, Non-Inflammable, Impervious to Moisture, Neutral to URIC ACID Secretions. Supersedes Hard Rubber or Celluloid.

Get to know of this. It is Something Different!

Suspensory Bandages and Jock Straps

We offer distinctive lines of outstanding value. Our weaving sheds allow of all intermediate profits being passed to our customers.

Write for sample range at Special Rate, then compare.

F. SCHUTZE & CO., LTD.**Black Bull Works, Market Road, London, N.7**

Quality Does Matter!
SURGICAL RUBBER GOODS

We offer the finest quality commensurate with price —we ought to know after 30 years' experience in contraception.

"SAFEGUARD" BRAND		s.	d.
A Quality. Thin Ivory (Packed 6 in Card Box) per gross		21	0
AA Quality. Medium Ivory (Packed 6 in Sealed Wallet)		24	0
AAA Quality. Medium Ivory (Silk Finish) (Packed 6 in Sealed Wallet)		30	0
AAAA Quality. Medium Transparent (Packed 6 in Leatherette Wallet)		33	0
"SAFEGUARD" BRAND. Super Tropical Quality. Guaranteed for 5 years.		s.	d.
Fine Ivory (Packed 3 in Sealed Box)	per gross	28	0
" Silk (Packed each in transparent envelope and 3 in Box)		32	0
" Transparent (Packed each in Flexi-glass Tube and 3 in Sealed Box)		36	0
"THE SUMMIT" BRAND.		s.	d.
Thin Natural or Ivory (Packed 3 in Carton)		18	6
" Transparent (" " ")		22	6
"SAFETEX" BRAND.		s.	d.
Thin LATEX —(Silk Finish) (New Style Packing—Packed 3 in Sealed Envelope with transparent cover)		21	0
Thin Transparent LATEX (New Style Packing—as above)		30	0

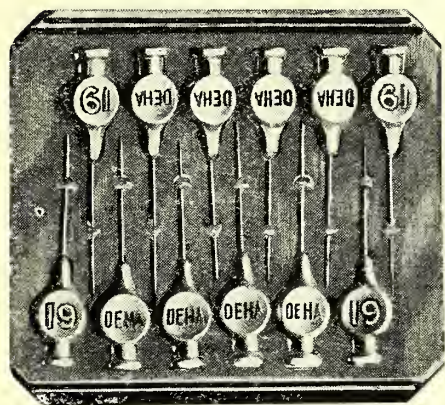
For Sale ONLY to Chemists and Birth Control Specialists.

BURGE, WARREN & RIDGLEY, LTD.

91 & 92 GREAT SAFFRON HILL, LONDON, E.C.1

Telephone: HOLborn 0050. Telegrams: Drugsund, Smith, London

INJECTA (LONDON) LIMITED



"DEHA" PATENT RECORD NEEDLES

Made in Steel and Stainless
U.K. Patent No. 333,420

Manufacturers of

**CONTRACID, STEEL
AND
STAINLESS NEEDLES**

ASPIRATION

BLOOD TRANSFUSION

DENTAL

HYPODERMIC, HÆMORRHOIDAL

INTRA-MUSCULAR

LARYNGEAL

LACHRYMAL

PNEUMO-THORAX

SERUM & SPINAL

VARIX VEIN

VETERINARY

Manufacturers of

The Original
"ARROW RING"
RECORD SYRINGE



"ARROW RING"
NEW MODEL
HÆMORRHOIDAL
SYRINGE

Suppliers of

SURGICAL INSTRUMENTS

SURGICAL SUNDRIES

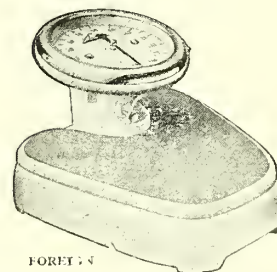
"SECA" WEIGHING MACHINES

INSTRUMENT & SYRINGE STERILIZERS

MICROSCOPES & DISSECTING SETS

RADIANT HEAT LAMPS

CENTRIFUGE MACHINES



FORET & S

"SECA"
POINTER No. 101
PERSONAL SCALE

AUDREY HOUSE, ELY PLACE, LONDON, E.C.1

Telegrams: INJECTALIM, SMITH, LONDON

Telephone: HOLBORN 0338

These two lines are in demand !



DALZO-LASTIC FIRST AID DRESSING

Sold in 3d., 6d., and 1/- tins. Advertised in national papers. Excellent displays are available and also folders containing a free sample.

Manufactured by
A. de ST. DALMAS & CO. LTD.

Following a nation-wide sampling scheme through press advertising, there is an excellent demand for Dalzo-Lastic First Aid Dressing and Poppy Corn Straps. Do not risk disappointing your customers, order supplies today and obtain your share of the business!

"POPPY" ELASTIC CORN STRAPS

A display stand is given free with orders for three dozen.



- **LEICESTER**

J. H. HAYWOOD, LTD.

11 Warser Gate, NOTTINGHAM

Tel.: 40488 NOTTINGHAM Established over a Century
Telegraphic Address: "APPLIANCE, NOTTINGHAM"

Surgical Appliance Manufacturers



Inventors of Seamless Elastic Hosiery

Specialities :

ABDOMINAL BELTS, TRUSSES
(Spring and Elastic), SUSPENDERS,
BRACES, DRUGGISTS' SUNDRIES.

PRICES ON APPLICATION

"SEL-KA"

(Regd.)

RUBBER PREVENTATIVES

are still of the thinnest, finest and most reliable quality. An article which can be safely recommended.

Supplied to Chemists and Druggists only.
Free samples and complete Price List for great variety of medical and mechanical Contraceptives on demand.

SELKA TRADING CO.
109 Charlotte Street, London, W.1

The World's best-seller for Varicose Veins

"Academic" REGD SURGICAL HOSE

NOW MADE WITH THE FAMOUS
"LASTEX" YARN

AS WELL AS WITH RUBBERLESS COTTON YARN AS BEFORE

FOR PARTICULARS AND TRADE TERMS WRITE TO MANUFACTURERS
"ACADEMIC" DEPOT, 156-162, OXFORD ST., LONDON, W.1
TELEPHONE: MUSEUM 6313 TELEGR.: EORGENLIBI, LONDON

BRITISH MADE
HYPODERMIC
SYRINGES



FIVEPOINT

BRITISH MADE
HYPODERMIC
SYRINGES

WHOLESALE & EXPORT ONLY

Fivepoint Record Hypo and Serum SYRINGES can now be supplied with Barrels made from Pyrex Glass.

The advantages are that the Barrels do not crack or break when suddenly transferred from 300°C to water at 5°C.

ACTUAL MANUFACTURERS
of
ORIGINAL RECORD HYPODERMIC & SERUM
—SYRINGES—

"FIVEPOINT" ORIGINAL RECORD SYRINGES

"FIVEPOINT" GLASCORD SYRINGES

"FIVEPOINT" TWO-PIECE GLASS SYRINGES

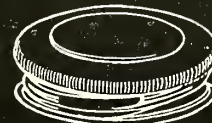
"FIVEPOINT" SYRINGES. For Camphor Oil, V-Vein, Schick Test, Hæmorrhoidal, Anæsthesia, etc.

FULL PARTICULARS ON APPLICATION

Telegrams:
"TOURNQUET,"
SMITH, LONDON

GENERAL SURGICAL COY., LTD., ROSEBURY AVENUE LONDON, E.C.1

Telephone:
CLERKENWELL
6046, 6047, 3929



BRITISH MADE
METAL SMALLWARES
of every description

Tell us your requirements
CATALOGUE ON APPLICATION

ROLATUBE KEY



NO MESS NO WASTE

Can be transferred from exhausted tube to new one—Can be stamped with your name and address as a permanent advertisement.

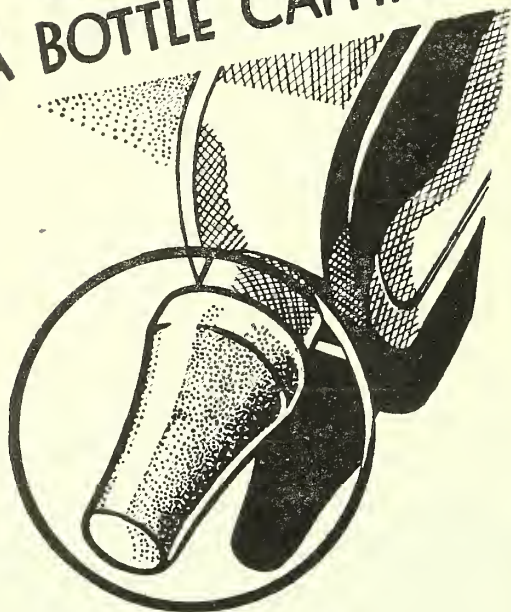
Particulars on application

L. ELBOZ & SON

MANUFACTURERS MERCHANTS & AGENTS

"RAYON D'OR," 94 FERNDENE ROAD,
LONDON, S.E.24 TELEPHONE: BRIXTON 3456

WE OFFER A BOTTLE CAPPING..



GIVING THE FOLLOWING ADVANTAGES..

**SPEED OF OPERATION —
PERFECTION OF FINISH —
MINIMUM WASTE,**
In Standard Colours —
BLACK, RED, WHITE or BLUE.
Special Colours and Shades to
order.

**PRICE 12/- to 15/- per
gallon according to quantity.**

DOPE DEPARTMENT

British Celanese Limited, Celanese House,
Hanover Square, London, W.1

● May we give you the pleasure of testing it?
Write for Sample C.S.I. to the above address.

CORKS, STOPPERS, ETC.

WHOLESALE & EXPORT

Send us your enquiries
and compare our prices.
We manufacture corks
of every description

Established 1844

C. OLLEY & SONS LTD.

Camperdown St. and Great Alie St., London, E.1.
Telephone : Royal 2868. Telegrams : Circumference, Edo, London

METALLIC CAPSULES

for all kinds of bottles, etc.

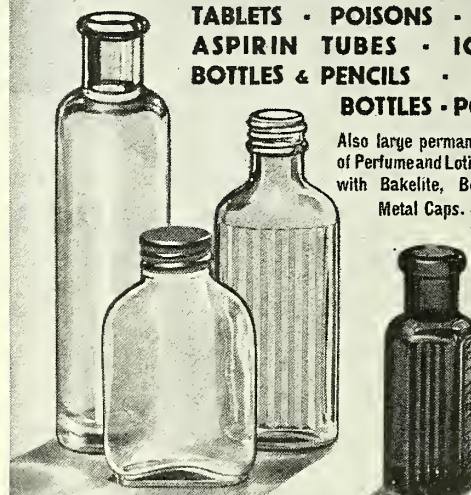
The Tonkin Metallic Capsule Co.

Prop. C. Olley & Sons Ltd.

BOTTLES OF ALL KINDS

**TABLETS · POISONS · VIALS
ASPIRIN TUBES · IODINE
BOTTLES & PENCILS · DROP
BOTTLES · POTS etc.**

Also large permanent stock
of Perfume and Lotion Bottles
with Bakelite, Beetle and
Metal Caps. . . .



VITREA UNION

BOTTLE & GLASSWARE CO. LIMITED

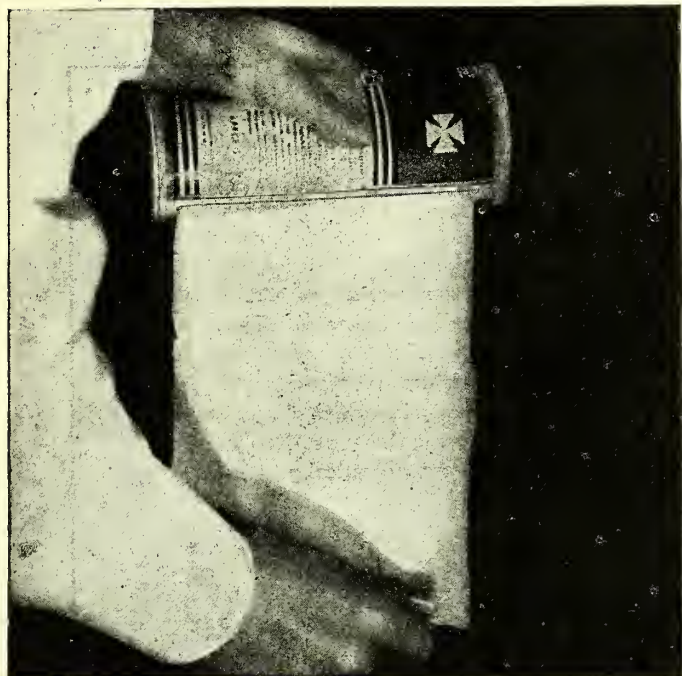
GRAMS : VITRAGLAS
PHONE LONDON

173 EVELYN ST.
LONDON, S.E.8

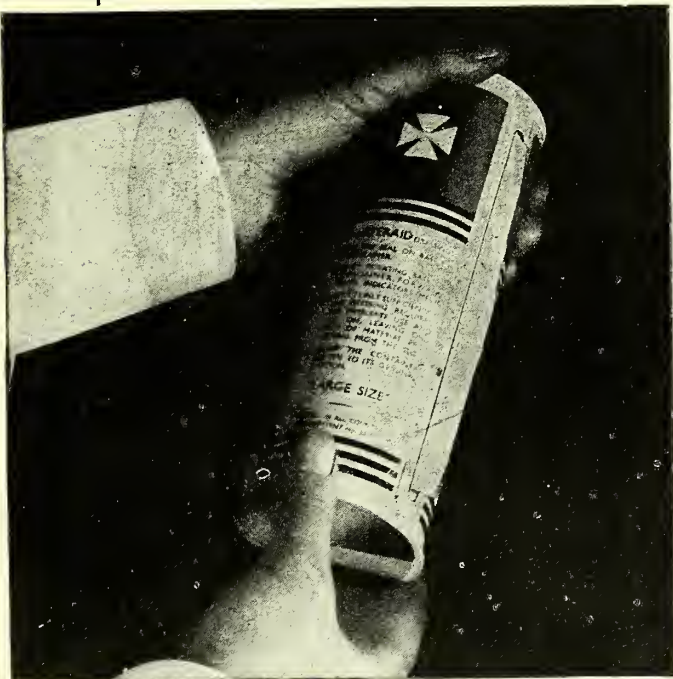
PHONE :
NEW CROSS 3577

» SURGICAL DRESSINGS «

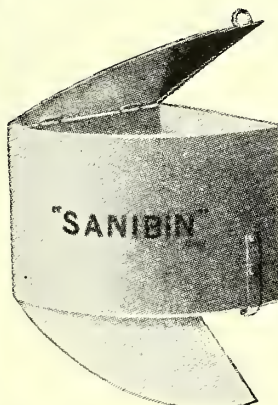
ENQUIRIES ARE INVITED FROM HOSPITALS, SURGICAL SUPPLY HOUSES, WHOLESALE DRUG HOUSES AND ALL BRANCHES OF THE TRADE FOR ANY OF THE FOLLOWING MANUFACTURES.



Instantly opened

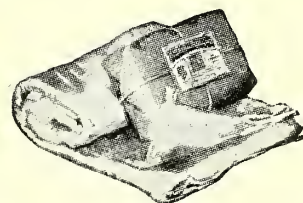
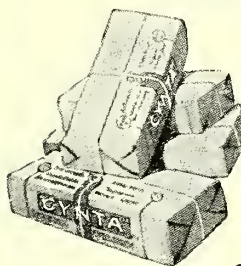


Instantly closed



B.P.C. N.H.I. Dressings. First Aid Dressings. Absorbent Cotton Wool. Medicated Wools. Bacteriological Wools. Absorbent Gauze Tissue. Non-Absorbent Wool. Plain and Boric Lint. Cellulose. Wood Wool Tissue. Upholsterers' Wools. Cotton Waddings. Absorbent Gauze. Absorbent Medicated Gauze. Bandages (all classes). Sanitary and Maternity Pads. Accouchement Outfits. Waterproof Sheetings, Etc., Etc.

Samples and Prices on application



STERAID

ABSORBENT AND MEDICATED
GAUZES AND LINTS

PRICES

			Retail each	Medical each	Trade doz.
Steraid Boric Lint	...	Large size	1/4	1/2	10/8
"	"	Medium	1/-	1/1	8/-
"	"	Small	7/-	6/-	4/8
" Plain Lint	...	Large	1/4	1/2	10/8
"	"	Medium	1/-	1/1	8/-
"	"	Small	7/-	6/-	4/8
" Plain Abs. Gauze	...	Large	1/10	1/7	14/8
"	"	Medium	1/2	1/0	9/4
"	"	Small	8/-	7/-	5/4
" Picric Gauze	...	Large	2/10	2/6	22/8
"	"	Medium	1/8	1/6	13/4
"	"	Small	10/-	9/-	6/8
" Iodoform Gauze	...	Large	2/10	2/6	22/8
"	"	Medium	1/8	1/6	13/4
"	"	Small	10/-	9/-	6/8
" Sublimate Gauze	...	Large	2/-	1/9	16/-
"	"	Medium	1/3	1/1	10/-
"	"	Small	9/-	8/-	6/-
" Sal-Alembroth Gauze	...	Large	2/-	1/9	16/-
"	"	Medium	1/3	1/1	10/-
"	"	Small	9/-	8/-	6/-
" Boric Gauze	...	Large	2/-	1/9	16/-
"	"	Medium	1/3	1/1	10/-
"	"	Small	9/-	8/-	6/-
" Carbolic Gauze	...	Large	2/-	1/9	16/-
"	"	Medium	1/3	1/1	10/-
"	"	Small	9/-	8/-	6/-
" D. Cyanide Gauze	...	Large	2/1	1/10	16/8
"	"	Medium	1/4	1/2	10/8
"	"	Small	9/-	8/-	6/-

Packed in display containers—Steraid Absorbent Boric Lint and Absorbent Plain Lint cartoned in 2 in., 4 in. and 6 in. widths. Steraid Plain and Medicated Gazes in 6 yd., 3 yd. and 1 yd. lengths.

» ROBERT BAILEY & SON Ltd

STOCKPORT & LONDON

CONTRACTORS TO ALL DEPARTMENTS OF H.M. GOVERNMENT AT HOME AND ABROAD



THROUGH 5 REIGNS

George IV.
William IV.
Victoria
Edward VII.
George V.

1826

Saul Josephs founded this firm and specialised in chemists' shopfitting.

1840

Liners first began plying Atlantic.

1851

Great Exhibition held in the Crystal Palace in Hyde Park celebrated triumph of British supremacy in industry.

1887

Queen Victoria's Jubilee.

1897

Kitchener regains Sudan for Britain.

1902

Great Britain goes "wild" on Mafeking Night. Mr. P. R. E. Josephs serves in South Africa with C.I.V.s.

1914

Britain enters the War.

1918

Signing of the Armistice once more proves British supremacy.

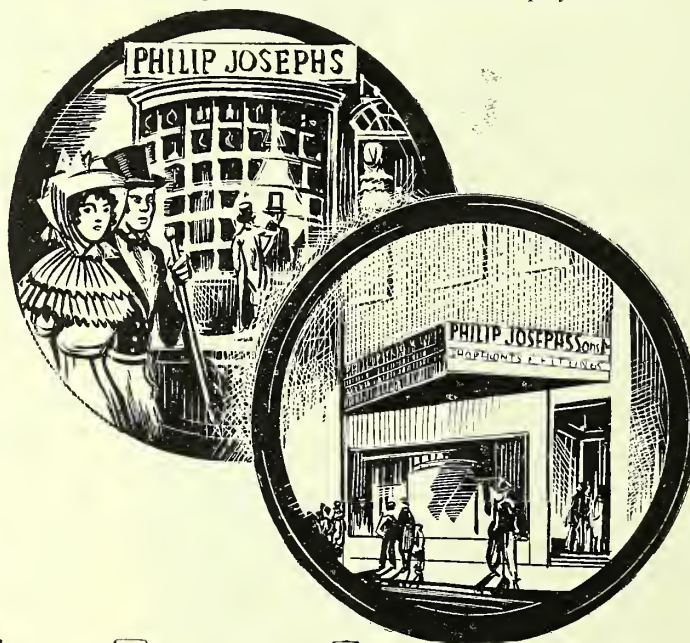
1926

The Great Strike paralyses British commerce.

1935

Depression over, Britain once again prepares to enjoy herself.

SINCE 1826, when George IV. was on the throne, the house of Philip Josephs & Sons has made steady progress. During our 109 years of business we have seen great changes, not all of which seemed for the best. But by moving with the times and taking care to maintain our reputation for fair and square dealing we are happy in the knowledge that the Jubilee of our beloved King George finds us still the foremost shopfitting specialists to the Pharmaceutical profession.



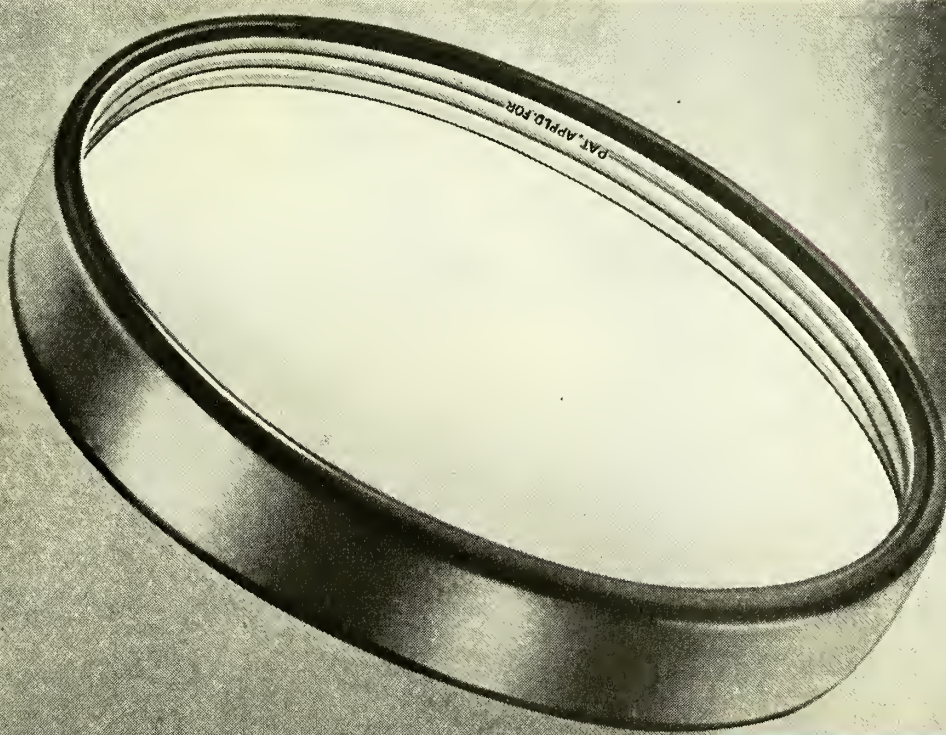
Philip Josephs & Sons Ltd

Phone :
CLERKENWELL 2191

PHARMACY FITTERS FOR OVER A CENTURY

90 & 92 ST. JOHN STREET, CLERKENWELL, LONDON, E.C.1

British



Duplex

Announces A one piece double shell cap

British Duplex Seals, Ltd., has accomplished the seemingly impossible—a double shell cap from a single piece of metal! Quite the most sensational development in closure manufacture in the last 35 years. We have named it Unishell! Here is combined the convenience and design of a double shellcap, the beauty of a moulded closure, a degree of sealing efficiency hitherto unobtainable in this type of seal, and all at a lower cost. Hard to believe? Then write for samples. The cap is tight, of course—it is manufactured by the makers of "Duplex," the Tightest Air-Tight Closure known. See it on display in our showrooms, 63-65, Piccadilly, London, W.1.

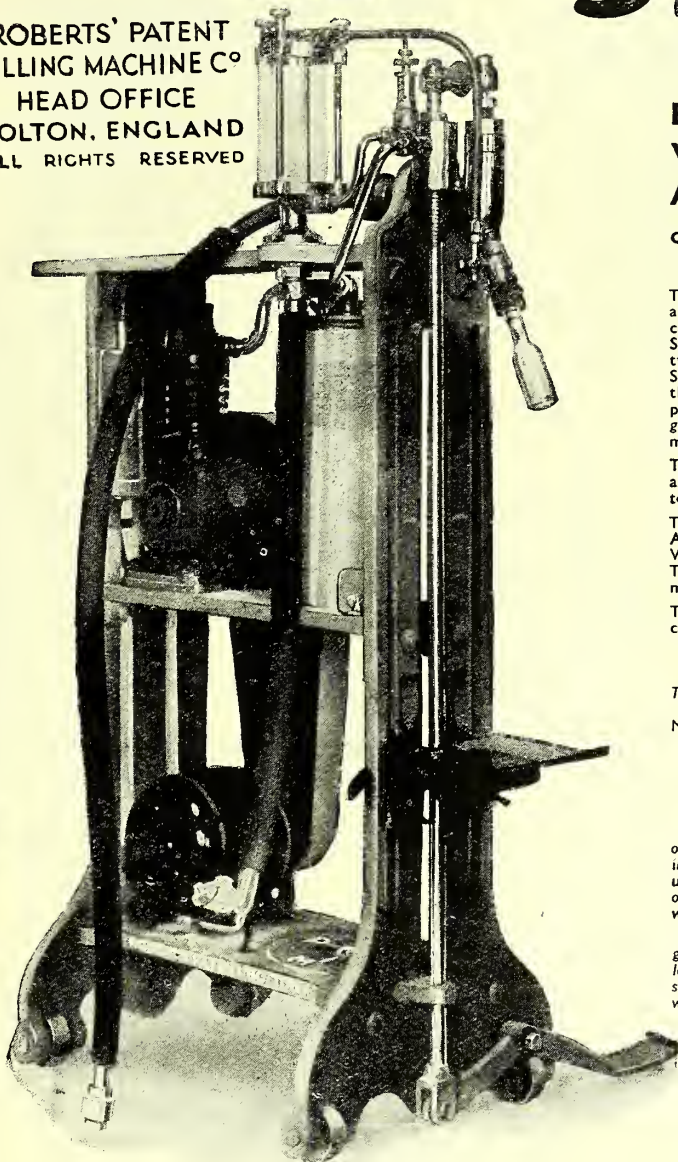


BRITISH DUPLEX SEALS, LTD.,
63-65, PICCADILLY, LONDON, W.1. REGENT 3730.



**UNPRECEDENTED
VALUE**

ROBERTS' PATENT
FILLING MACHINE CO.
HEAD OFFICE
BOLTON, ENGLAND
ALL RIGHTS RESERVED



LEO "A." Drawing No. 2128

We estimate that WE SAVE IN ACTUAL LABOUR AND WASTAGE CHARGES ABOUT £5 PER WEEK and this is quite apart from the saving in floor-space that quick, clean handling of bottles must result in.

If at any time you are having difficulty in convincing a customer that yours is the best machine obtainable please refer him to us.

Write to-day for prices and opinions of users.

**ROBERTS' PATENT
FILLING MACHINE CO.**

(T. ROBERTS, PROPRIETOR)

**3 MACHINES IN ONE
VACUUM FILLING. VACUUM AND
GRAVITY FILLING. GRAVITY FILLING****ROBERTS' PATENT
PORTABLE "SUNBEEM"
VACUUM GLASS, STONE
AND TIN BOTTLE FILLER**

Code Sunbeem "Leo" Patent Nos. 284834-28,
310642-29. Other Patents Pending

The "Leo" is a strong-well-finished Machine weighing about 2½ cwt. with the Motor. The pump has ample capacity to operate two single-head Roberts' Patent Sunbeem Vacuum Bottle Fillers, in addition to itself; or two Roberts' Patent Gravity Bottle Fillers converted into Sunbeem Vacuum Fillers—acting as a motor and pump for them. They need not be grouped close together. Each part is designed to save trouble and give long service, and guaranteed 12 months against faulty material or workmanship.

The "Leo" can be moved about to any part of a room and operated without preparation other than connecting to a lamp-holder or wall socket.

The "Leo" will fill the bottles clean and to any height. A great saving of time is effected by the fact that, in Vacuum Filling, liquid will not flow into broken bottles. The sorting out of damaged bottles can be left to the machine.

The "Leo" method of filling is so simple that a juvenile can obtain record results.

Testimonial Received from

Messrs. HOLLAND & SIDEBOTHAM & CO.
Manufacturing Chemists,
Denton, MANCHESTER.

November 21, 1935

You will remember the writer calling on your Mr. Roberts about 18 months ago to discuss the difficulty that we were having in the filling of Iodine Solution. Your Mr. Roberts designed us specially lined fittings to one of your "Leo" Machines and it is with reference to the performance of this machine that we write.

Prior to this machine being delivered we had about a dozen girls fully employed hand-filling and corking these bottles of Iodine. Output was bad, Iodine was spilled all over the place, some bottles were half full and others too full, and the whole job was as bad a piece of disorganisation as could be imagined.

We spent, as you will remember, a little over £70 on the FILLER AND CORKING MACHINES with the following results. Three girls now do all our filling and corking in half a week. All the bottles are filled correctly. Waste and mess are entirely eliminated and all our bottles go to the packers in a clean, dry condition.

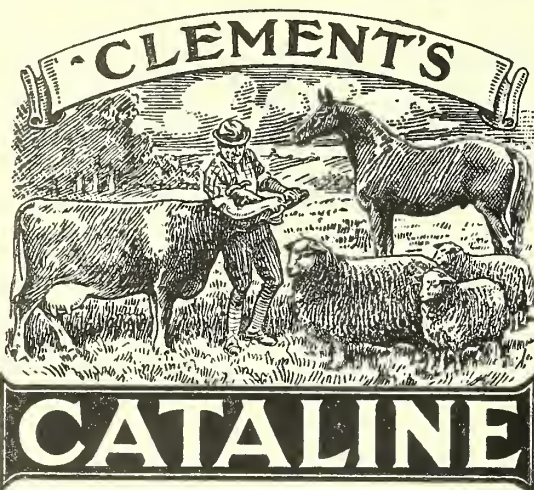
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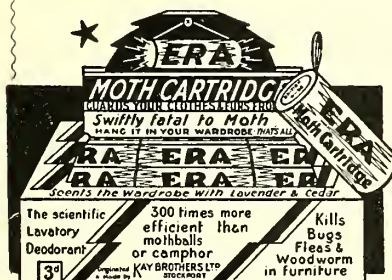
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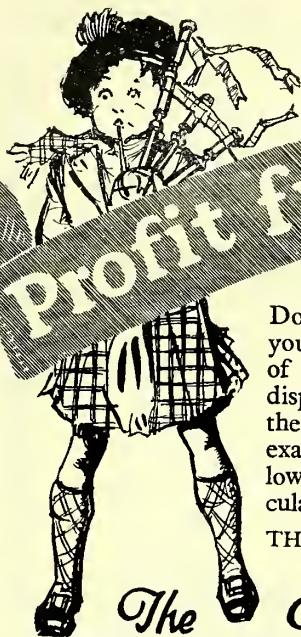
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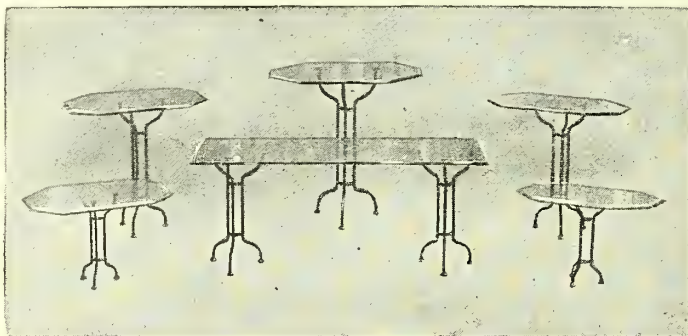
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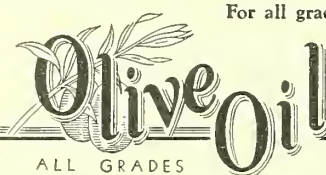
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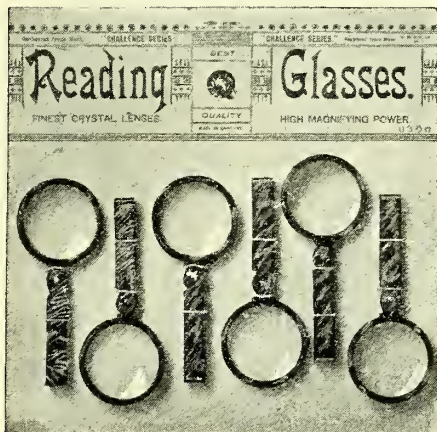
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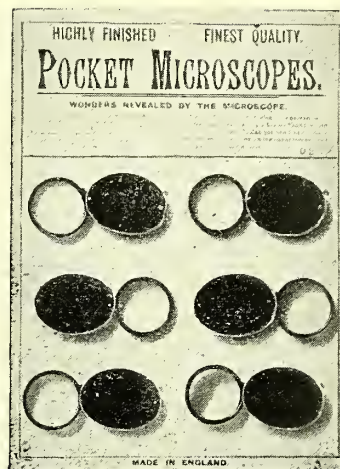
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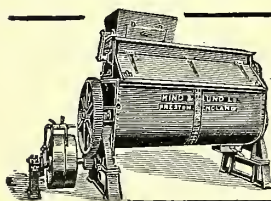
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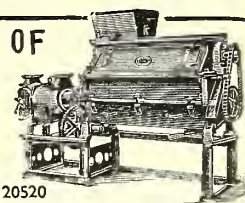


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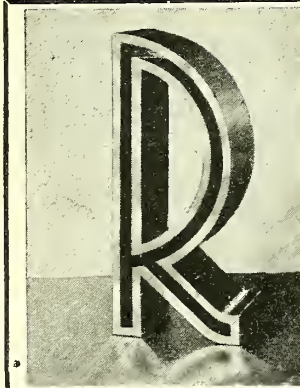
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MANCHESTER.—Pharmacist wanted for branch shop; nice district; commence at once. State usual particulars and salary required to Pharmacist, "Hillcrest," Leicester Road, Salford, 7.

MANCHESTER.—Qualified Man required; must be smart and reliable and of good appearance; Optical experience an advantage, though not essential. Reply, with full particulars, to 22/4, Office of this Paper.

ASSISTANT, Unqualified, required immediately, either sex; good Window-dresser, with knowledge of Photographic business and N.H.I. Dispensing work. Towse, Oxlow Lane, Dagenham, or for appointment phone Seven Kings 2722.

AT ONCE.—Young Qualified Assistant for Counter and Dispensing. Apply, with full particulars, by letter only, to Henry Cooper & Co., Ltd., 24 Greek Street, Soho Square, London, W.1.

CAPABLE Junior Assistant, Unqualified, required at once for good-class business; one used to Dispensing and with good knowledge of Photography. Apply with full particulars, age, height, salary required, giving references to Smalleys, Chemists, 6 and 8, Carr Street, Ipswich.

JUNIOR Assistant (gentleman) required immediately, until middle of September, for practical Photographic work; previous knowledge of Developing and Printing essential; please give full particulars of experience and state age and salary required. Hoare, Chemist, Cromer.

LADY Assistant required for season at Ventnor. Full particulars, with photo if possible, to W. H. J., Woodlands Chemists, Ltd., 28 St. John's Lane, E.C.1.

LADY Assistant required, permanency, near London; good Dispenser and Saleswoman (age 20-25). Reply, stating experience and salary required, with photo if possible, to 23/10, Office of this Paper.

LOCUM, Qualified, lady or gent., August 9-22 (inclusive); state salary and usual particulars. Bower, The Parade Pharmacy, 334 Grove Green Road, Leytonstone, E.11.

LOCUM, Qualified, required for leading West End Store, August 15 to 29 inclusive. 283/259, Office of this Paper.

PERMANENCY.—Qualified, elderly gentleman, or lady, for light duties; good Dispenser; must live within reasonable travelling distance. Apply Mrs. Edgar Wilson, 356 Essex Road, Islington, N.1.

QUALIFIED Assistant for N. London; light duties, easy hours, no Sunday work. Write, stating age and salary expected, N. Jenkins, 32 Belmont Road, N.15.

QUALIFIED Assistant required for Midlands. State age, experience and salary required to 23/43, Office of this Paper.

QUALIFIED Assistant wanted to take charge of Drug Department and to assist in general Counter trade; country town, Home Counties. Write, stating age, experience and salary required, to 23/21, Office of this Paper.

QUALIFIED Chemist for small branch; suit recently Qualified man. References and salary to Carr, Chemist, 58 High Street, Cleethorpes.

QUALIFIED Chemist required at once; also Unqualified Lady Assistant with good experience N.H.I. Dispensing and Counter; permanent post. Apply, stating age, experience and salary required, to Smiths, Chemists (Grays), Ltd. Dispensing and Photographic Chemists, Tudor House, Socketts Heath, Grays, Essex.

QUALIFIED Chemist required, either sex; tidy Dispenser and good Counterhand desirable. Write fully, including age, references, salary, and when free; Locum or Part-time considered if terms reasonable, "Chemist," BM/JPH, London, W.C.1.

QUALIFIED Chemist to take charge of small Seaside Branch Pharmacy (permanency); must be competent Dispenser and Window-dresser. Apply immediately, stating age, experience and wages required to Managing Secretary, Sheerness and District Economical Co-operative Society, Ltd., 100 High Street, Sheerness.

QUALIFIED Dispenser (female), and to assist at Counter; Minor qualification essential (age 25 to 30). Write, stating age, experience and salary required, to Staff Supervisor, Welwyn Stores (1929), Ltd., Welwyn Garden City, Herts.

QUALIFIED Lady Assistant required to manage Toilet Department in high-class London suburb; must be fully conversant with modern Toiletries and able to control staff. Apply "A.," 282/249, Office of this Paper.

QUALIFIED Lady or Gent. (young), as Superintendent, required for small limited company, North Kent; state age, experience, wage required, when disengaged; applications unanswered within 6 days respectfully declined. 23/2, Office of this Paper.

QUALIFIED, permanency in high-class Pharmacy, London, N.W.2; progressive salary-commission, with/without good flat; keenness in all branches imperative; can wait for suitable applicant; J.C.Q.O. advantageous; advertiser's equipment and stock. Write or telephone, in confidence, Travers, Gladstone Parade, N.W.2.

REQUIRED immediately.—Qualified Assistant for temporary work. Rushtons, 52 West Street, Southport.

REQUIRED Immediately.—Qualified, either sex, for branch; must be reliable. Also Unqualified Assistant (age about 25); good Dispenser and Salesman; state salary required. Roe, Chemist, Epsom.

UNQUALIFIED Assistant required for high-class Pharmacy in Torquay; must be quick and accurate Dispenser and good Salesman. Apply, giving age, full particulars of experience and salary required, to 282/256, Office of this Paper.

UNQUALIFIED locum required for fortnight, July 20-August 1; must be used to quick Counter and N.H.I. C. Gadd & Son, 1 Harleyford Road, Vauxhall, London, S.E.11.

WANTED, end of July, Qualified man; duties very light; easy hours; permanency to person with small income wishing to take things easy; moderate wage; only 10 miles South of London. 23/26, Office of this Paper.

CLEAR OUT—your Old or Damaged Stock of Photo Goods.
Why keep them any longer? Turn them into CASH.
I GIVE BEST PRICES for Old Films (damaged, fogged or expired dates); Packet Papers. Cards (any sizes). Old Photo Goods or Cameras. Bromide Papers. Plates (all sizes, all makes). Send any goods in the photo line. I buy all, good or bad. Cash per return. A good price for all Cameras. Send them along.
S. E. HACKETT, 23 July Road, Liverpool
[CHEMISTS ONLY]

WANTED immediately, Qualified Dispenser for good-class Pharmacy (age 25-30 preferred); locum would be accepted with view to permanency. Apply, stating age, salary required, etc., to 23/6, Office of this Paper.

WANTED, Qualified Assistant, West Country; state age, salary required. 17/55, Office of this Paper.

WANTED.—Qualified Locum, for one or two weeks commencing about August 14 or 21; small country town; assistant kept; good references. J. Prescott, Tetbury, Glos.

WANTED.—Qualified Manager, London; permanency; good Window-dresser and quick and accurate Dispenser, also with knowledge of Photography. Apply, in writing, to 23/29, Office of this Paper.

WANTED.—Season Assistants, lady and gent. (Unqualified), required for seaside, Cornwall. Also young Qualified Manager. State experience, salary required, also enclose reference and photo. 23/28, Office of this Paper.

WE REQUIRE the services of a Qualified Assistant who would prove to be a competent Dispenser, good Salesman and Window-dresser. Apply, with usual particulars, Gaze & Garside, Ltd., 92 Turners Hill, Waltham Cross, Herts.

YOUNG Qualified Assistant required for Yorks, W.R., business; must be reliable Dispenser for N.H.I. and good Counterman; permanency for good all-round man; photo, experience, wages, etc. 23/45, Office of this Paper.

YOUNG, Unqualified, accustomed brisk business; good Dispensing experience; knowledge of Photographic and Window-dressing; state experience and salary first letter, also appearance, tall, short, dark, fair; unanswered 7 days respectfully declined. Smith, Chemist, 233 Birchfield Road, Northampton.

WHOLESALE.

ADVERTISING.—Wanted, the occasional services of one accustomed to Writing Adverts. for Proprietary line; suitable for postal and newspaper advertising. W. F., 20/5, Office of this Paper.

MEDICAL Propaganda Representative required for West End of London; write, giving particulars of experience, age, height and qualifications; knowledge of Glandular Products an advantage. 282/250, Office of this Paper.

SALES Manager required to take charge of Sales in a Northern Company producing popular priced Medical and Toilet Specialities; present sales are large, but capable of far greater extension at home and abroad; the position can only be filled by one who has had previous experience as a Sales Manager; payment will be made partly by results, but applicants must be prepared to earn at least £1,000 the first year; give brief details in first letter, in confidence. 282/255, Office of this Paper.

SOLE Representatives required in several districts for sale of "Prico" Fur Powder Puffs regularly advertised to the trade. See full-page advertisement on p. 31 in this week's C. & D. Apply, with full particulars and area covered, to Grimwood & De Geus, Ltd., 4-7 Finsbury Court, London, E.C.2.

YOUNG Qualified Chemist wanted by established Medical Proprietary House to act as Superintendent, etc.; previous experience not essential. Give full details and salary required to 282/253, Office of this Paper.

SITUATIONS WANTED.

RETAIL (HOME).

2s. for 18 words or less; 6d. for every additional 10 words or less, prepaid. (Box No., 1s. extra.)

A.—LOCUM or permanent; tall; abstainer; prizeman, Photo-graphics and Ciné; unregistered; highest references; London and seaside experience. "Mac," Wotton-under-Edge.

A SMART Qualified Manager (25), 8 years' first-class experience, desires change; expert Salesman, quick and accurate Dispenser, Window-dresser; irreproachable references. Reply 23/35, Office of this Paper.

A SSISTANT (39), Unqualified; all-round experience, Window-dressing; disengaged July 4; present situation 6 years. T. S., 5 Langdale Road, Thornton Heath, Croydon, Surrey.

A SSISTANT (27), Unqualified; good, all-round experience Dispensing, Counter, Window-dressing; London. "Advertiser," 44 Turneville Road, W.14.

BIRMINGHAM and Midlands.—Short notice Locum or Relief work; Qualified. 17/22, Office of this Paper.

CHEMIST wishes to recommend Manager whose services unfortunately have to be dispensed with. 23/41, Office of this Paper.

LADY Dispenser seeks post; Hall qualification; experience with Doctors and Hospital; Clerical ability, Matriculation; highest references. 23/49, Office of this Paper.

LOCUM, Unqualified (28), F.S.M.C.; free July 27 to August 8; London area preferred. 37 Cale Street, Chelsea, S.W.3.

LOCUM, Unqualified (34); smart, active; thorough all-round experience; free immediately; anywhere. "Leon," 9 Spinney Rise, Birstall, Leicester.

M.P.S., F.B.O.A. (37), wide experience; personality; excellent credentials; with or without view succession; state salary. 23/44, Office of this Paper.

PART-TIME Assistant seeks post (Lady); Hall qualification; experienced all branches of work; Brighton or near. 8 Prestonville Road, Brighton.

PERMANENCY or locums till suited, experienced, energetic Assistant (45); tall; Unqualified; keen Salesman, quick Dispenser, Photo, Windows, Agricultural, etc.; conscientious and trustworthy; disengaged. Haigh, 25 Hetley Road, Shepherd's Bush, W.12.

PHARMACIST (35), married, desires permanency as Branch Manager, London or near, preferably with living accommodation; all-round experience; present position (branch manager) 10 years. 22/1, Office of this Paper.

QUALIFIED Salesman, Square trained Scot, tall, aged 27; 10 years' High-class experience London and Provinces; accurate Dispenser, fully versed in Photographics and Cosmetics, desires post as Manager in Retail, or represent firm of repute at home or abroad. Strang (Mr.), Bel-air, Esplanade, Guernsey.

QUALIFIED (28); recommended for any position requiring industry, integrity and undivided interest, desires change; small capital if required; London only. 23/47, Office of this Paper.

SCOT (36), M.P.S., F.S.M.C., good appearance and address (6 ft.), desires change; experienced Manager of good-class businesses; conscientious and trustworthy; excellent references; Scotland preferred; state salary, please; free one month. 23/16, Office of this Paper.

UNQUALIFIED Assistant (24) requires post, near London, with Chemist-Optician, with opportunity to study Optics; Part I F.S.M.C. Marshall, Ingleside, St. Chad's Road, Chadwell Heath, Essex.

YOUNG Qualified Pharmacist, competent Salesman, Dispenser, requires immediate change; West End or City business preferred; sound private and business testimonials. H. H. Kitchener, 33 Popham Road, Islington, N.1.

WHOLESALE.

CHEMIST (24), height 6 ft., desires position in Wholesale House where business acumen and ability required; position must offer scope for keen salesman of good appearance and varied experience; at present successfully Managing in Retail; will go anywhere. 23/13, Office of this Paper.

COSMETIC Chemist and Perfumer; Wide experience Synthetic Compounds; Specialist in Manufacture for Cheap Trade; able control factory labour, production and buying; own formulae; desires change; excellent references. 23/38, Office of this Paper.

EXECUTIVE, Commercial, Medicine and Pharmacy, associated Ethical Laboratories for ten years; age 36. P.C.B. 209/10, Office of this Paper.

EXPERIENCED Traveller of highest integrity (M.P.S., F.B.O.A. (Hons.)), desires represent really good house (Drug and Sundries), Commission basis; Perth to Thurso (own car), with Aberdeen as centre, where have stockroom and staff; bankers' refs. State commission. 282/252, Office of this Paper.

GENTLEMAN (26), 10 years' Retail, desires to represent reputable Drug or Toilet House; Lancashire territory preferred, but not essential. 23/42, Office of this Paper.

M.P.S. (33) seeks further experience in Wholesale or Manufacturing business; several years' management; knowledge of Book-keeping and Accounts. 22/14, Office of this Paper.

PROFESSIONAL/TRADE PROPAGANDA, SALES. — Doctors, Chemists, Licensed Traders; car; long experience; salary and expenses. "Boaz," General Gordon Hotel, Weymouth.

TABLET-MAKER; 25 years' practical experience all branches, Sugar and Chocolate Coating, etc.; capable of taking charge. "F. W. B.," 39 Chaucer Road, E.17.

TO make full practical use of his knowledge, German expert with wide practical experience seeks financially sound firm or person for the establishment of a Chemical-Pharmaceutical Factory, or alternatively would like to become connected with a firm already in business. Box J 282, R. Mosse, Prague I/569, Czechoslovakia.

WEST OF ENGLAND Representative (Qualified Chemist) of leading Manufacturer is open to take additional line of equal standing; opportunity to secure economical representation. Greenwood, 18 Lyndhurst Road, Plymouth.





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